

Mechanism and kinetic study on the ring-opening degradation of 2,3,7,8-Tetrachlorinated Dibenzofuran initiated by OH radical in waste incineration

Kun Zhang^(a), Shengmin Sun^(b), Hui Zhang^{(a)*}

^(a)College of Chemical and Environmental Engineering, Harbin University of Science and Technology, Harbin 150080, P. R. China

^(b)College of Food Engineering, Harbin University of Commerce, Harbin 150076, P. R. China

Scheme S1. The reactions of 2,3,7,8-TCDF initiated by the OH radical addition to carbon site 1

Scheme S2. The reactions of 2,3,7,8-TCDF initiated by the OH radical addition to carbon site 2

Scheme S3. The dechlorination reactions of 2,3,7,8-TCDF initiated by the OH radical addition to carbon site 3 and site 4

Scheme S4. The reactions of 2,3,7,8-TCDF initiated by the OH radical addition to carbon site 5

Scheme S5. The reactions of 2,3,7,8-TCDF initiated by the OH radical addition to carbon site 6

Table S1. The geometry coordinates of all species optimized at B3LYP/6-311+G(d,p) level

2,3,7,8-TCDF:

C	0.773746000	0.000014000	3.053694000
C	1.173416000	0.000009000	1.720749000
C	0.198196000	0.000002000	0.724960000
C	-1.156112000	0.000001000	1.096279000
C	-1.580503000	0.000002000	2.411356000
C	-0.593350000	0.000012000	3.396443000
H	2.229041000	0.000012000	1.481972000
H	-2.629385000	-0.000001000	2.674543000
C	-1.156112000	0.000001000	-1.096279000
C	0.198196000	0.000002000	-0.724960000
C	-1.580503000	0.000002000	-2.411356000
C	1.173416000	0.000009000	-1.720749000
C	-0.593350000	0.000012000	-3.396443000
H	-2.629385000	-0.000001000	-2.674543000
C	0.773746000	0.000014000	-3.053694000
H	2.229041000	0.000012000	-1.481972000
O	-1.984392000	-0.000020000	0.000000000
Cl	-1.100428000	-0.000001000	5.065665000
Cl	2.008991000	-0.000008000	4.290582000
Cl	-1.100428000	-0.000001000	-5.065665000
Cl	2.008991000	-0.000008000	-4.290582000

OH:

O	0.000000000	0.000000000	0.108429000
H	0.000000000	0.000000000	-0.867431000

RC1:

C	3.205002000	0.805897000	0.052721000
C	1.883696000	1.241037000	0.080345000
C	0.864549000	0.302952000	-0.072783000
C	1.201746000	-1.047892000	-0.249490000
C	2.504022000	-1.507423000	-0.281725000
C	3.512855000	-0.557477000	-0.126253000
H	1.672478000	2.293095000	0.220148000
H	2.738865000	-2.554092000	-0.416882000

C	-0.984703000	-0.992342000	-0.287896000
C	-0.584474000	0.340418000	-0.102057000
C	-2.315376000	-1.384290000	-0.356978000
C	-1.557469000	1.331008000	0.004373000
C	-3.278574000	-0.369349000	-0.267900000
H	-2.599305000	-2.409950000	-0.538822000
C	-2.902469000	0.971312000	-0.078745000
H	-1.295491000	2.370807000	0.150757000
O	0.083039000	-1.835763000	-0.387097000
Cl	5.168254000	-1.107065000	-0.158838000
Cl	4.472696000	1.994184000	0.247355000
Cl	-4.956146000	-0.825040000	-0.396329000
Cl	-4.104906000	2.233198000	0.053285000
O	-2.179223000	-2.154966000	1.975746000
H	-2.898153000	-1.596835000	2.320901000

TS1:

C	3.118162000	0.825704000	-0.002211000
C	1.792713000	1.230033000	0.105805000
C	0.787829000	0.265021000	0.038460000
C	1.140916000	-1.083844000	-0.142780000
C	2.448690000	-1.511453000	-0.251167000
C	3.443039000	-0.535034000	-0.179446000
H	1.564528000	2.278574000	0.245128000
H	2.699948000	-2.554485000	-0.383939000
C	-1.038887000	-1.097379000	0.049752000
C	-0.652238000	0.281506000	0.084246000
C	-2.374370000	-1.477052000	-0.203734000
C	-1.631838000	1.264295000	0.077323000
C	-3.330634000	-0.481029000	-0.214337000
H	-2.637360000	-2.517694000	-0.328928000
C	-2.966973000	0.882860000	-0.057197000
H	-1.383743000	2.315846000	0.135987000
O	0.040016000	-1.898375000	-0.219606000
Cl	5.103019000	-1.047751000	-0.313298000
Cl	4.368869000	2.043422000	0.089171000
Cl	-5.001153000	-0.936614000	-0.435712000
Cl	-4.181181000	2.130687000	-0.063321000
O	-1.026455000	-1.502604000	2.017095000
H	-1.692738000	-0.921823000	2.417259000

IM1:

C	3.090577000	0.825204000	0.015736000
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C	1.778260000	1.210291000	0.267462000
C	0.776277000	0.238237000	0.278717000
C	1.113038000	-1.108236000	0.025363000
C	2.406765000	-1.508549000	-0.238197000
C	3.401025000	-0.524543000	-0.236747000
H	1.555710000	2.252537000	0.455606000
H	2.651046000	-2.542495000	-0.438577000
C	-1.067297000	-1.181348000	0.553892000
C	-0.650603000	0.266799000	0.412812000
C	-2.381049000	-1.484464000	-0.081057000
C	-1.601446000	1.254153000	0.284497000
C	-3.281906000	-0.482035000	-0.237154000
H	-2.631471000	-2.517549000	-0.281080000
C	-2.930588000	0.894162000	0.021474000
H	-1.335379000	2.304034000	0.290875000
O	0.029268000	-1.937462000	0.020511000
Cl	5.039597000	-1.021149000	-0.557749000
Cl	4.335860000	2.052767000	0.020415000
Cl	-4.895294000	-0.868371000	-0.797528000
Cl	-4.119023000	2.150858000	-0.104356000
O	-1.088738000	-1.576429000	1.937752000
H	-1.821849000	-1.123224000	2.372996000

TS1-a:

C	-2.872011000	0.919129000	-0.037436000
C	-1.539621000	1.088602000	-0.400806000
C	-0.736149000	-0.045565000	-0.545915000
C	-1.296223000	-1.306263000	-0.291201000
C	-2.603767000	-1.503456000	0.092409000
C	-3.402433000	-0.362818000	0.209234000
H	-1.150501000	2.085029000	-0.562947000
H	-3.003953000	-2.488194000	0.290002000
C	0.806765000	-1.672126000	-0.783379000
C	0.647612000	-0.279175000	-0.869013000
C	2.302595000	-1.299731000	0.993485000
C	1.709572000	0.666065000	-1.106439000
C	3.090450000	-0.277013000	0.727014000
H	2.293273000	-2.043778000	1.775494000
C	2.875451000	0.628015000	-0.415681000
H	1.551595000	1.464708000	-1.823023000
O	-0.352484000	-2.295393000	-0.458414000
Cl	-5.070927000	-0.575942000	0.672019000
Cl	-3.872986000	2.344128000	0.119218000

Cl	4.412709000	0.133666000	1.866003000
Cl	4.138236000	1.759019000	-0.848952000
O	1.672594000	-2.516778000	-1.345310000
H	2.535703000	-2.089209000	-1.424273000

IM1-a:

C	3.089455000	0.824840000	0.008732000
C	1.710969000	1.025440000	0.055994000
C	0.869835000	-0.086421000	0.030280000
C	1.448927000	-1.356670000	-0.036956000
C	2.805998000	-1.591082000	-0.085008000
C	3.636114000	-0.469295000	-0.060266000
H	1.327598000	2.035804000	0.113948000
H	3.216299000	-2.589947000	-0.138143000
C	-0.715384000	-1.665532000	0.007446000
C	-0.573704000	-0.290723000	0.056656000
C	-3.833537000	-0.946107000	1.524805000
C	-1.522626000	0.794839000	0.055534000
C	-3.829765000	-0.203776000	0.448630000
H	-4.408770000	-1.714068000	2.015190000
C	-2.867458000	0.864038000	0.163017000
H	-1.048301000	1.761093000	-0.085918000
O	0.465948000	-2.321104000	-0.047801000
Cl	5.363970000	-0.722775000	-0.115841000
Cl	4.127000000	2.233375000	0.041106000
Cl	-5.130079000	-0.459815000	-0.780489000
Cl	-3.629385000	2.450043000	-0.005433000
O	-1.750997000	-2.479960000	-0.018882000
H	-2.554977000	-1.995762000	0.246371000

TS1-a-1 :

C	3.076819000	0.847949000	0.011417000
C	1.692634000	1.001389000	0.066054000
C	0.888734000	-0.137493000	0.037920000
C	1.509015000	-1.386561000	-0.040336000
C	2.872372000	-1.575498000	-0.099823000
C	3.665434000	-0.427006000	-0.070254000
H	1.276387000	1.998524000	0.128151000
H	3.314838000	-2.559971000	-0.162865000
C	-0.647218000	-1.777999000	0.004139000
C	-0.548654000	-0.388866000	0.064474000
C	-3.779028000	-1.310233000	1.125189000

C	-1.515088000	0.664596000	0.115903000
C	-3.889775000	-0.273741000	0.312732000
H	-4.496780000	-2.010996000	1.528015000
C	-2.875964000	0.758938000	0.150964000
H	-1.039267000	1.639863000	0.086587000
O	0.560151000	-2.385669000	-0.053281000
Cl	5.399455000	-0.622793000	-0.134200000
Cl	4.066710000	2.289452000	0.048431000
Cl	-5.378124000	-0.125483000	-0.673897000
Cl	-3.531594000	2.401464000	0.085247000
O	-1.652694000	-2.602910000	-0.016481000
H	-2.470102000	-2.156520000	0.373066000

P1-a-1:

C	3.083404000	0.818196000	0.034875000
C	1.714793000	1.046903000	-0.001837000
C	0.844739000	-0.047405000	-0.104553000
C	1.384739000	-1.349635000	-0.156185000
C	2.738085000	-1.600428000	-0.113992000
C	3.593753000	-0.496484000	-0.019079000
H	1.344810000	2.062524000	0.052226000
H	3.132104000	-2.606331000	-0.154806000
C	-0.839376000	-1.634757000	-0.277977000
C	-0.574891000	-0.184720000	-0.142997000
C	-3.425819000	-0.678373000	1.839228000
C	-1.503975000	0.883203000	-0.187112000
C	-3.669051000	-0.168927000	0.634119000
H	-4.046141000	-1.458878000	2.258870000
C	-2.852893000	0.887341000	0.029820000
H	-1.074735000	1.848458000	-0.440330000
O	0.412826000	-2.296685000	-0.251953000
Cl	5.306453000	-0.794417000	0.030795000
Cl	4.156129000	2.191791000	0.157620000
Cl	-5.054629000	-0.705466000	-0.306365000
Cl	-3.717029000	2.370096000	-0.342851000
O	-1.847199000	-2.257449000	-0.436800000
H	-2.587811000	-0.316242000	2.421818000

TS1-a-2 :

C	3.010319000	0.785579000	-0.139060000
C	1.704276000	1.059461000	-0.555485000
C	0.786642000	0.018644000	-0.622597000

C	1.206125000	-1.262756000	-0.240134000
C	2.477820000	-1.567811000	0.180940000
C	3.396259000	-0.512360000	0.226008000
H	1.435508000	2.073227000	-0.821570000
H	2.764383000	-2.570069000	0.467819000
C	-0.887290000	-1.500243000	-0.817728000
C	-0.651282000	-0.086344000	-0.922788000
C	-2.613056000	-0.758456000	1.847582000
C	-1.610275000	0.994657000	-0.647036000
C	-3.236323000	-0.205271000	0.846773000
H	-2.703021000	-1.550801000	2.570521000
C	-2.739885000	0.943560000	0.074142000
H	-1.358547000	1.947580000	-1.101383000
O	0.167666000	-2.194482000	-0.366651000
Cl	5.022261000	-0.863891000	0.751306000
Cl	4.149336000	2.109305000	-0.083963000
Cl	-4.837125000	-0.852677000	0.345764000
Cl	-3.758096000	2.380646000	0.162781000
O	-1.857904000	-2.016956000	-1.447855000
H	-1.474777000	-0.807910000	-1.973132000

P1-a-2:

C	2.711565000	0.792132000	-0.195114000
C	1.478187000	1.019346000	-0.815363000
C	0.599763000	-0.038035000	-0.966892000
C	0.956947000	-1.300479000	-0.504213000
C	2.164232000	-1.560578000	0.110803000
C	3.049754000	-0.488360000	0.261965000
H	1.232929000	2.016697000	-1.157520000
H	2.422643000	-2.549128000	0.464434000
C	-1.126063000	-1.628257000	-1.300144000
C	-0.765347000	-0.154763000	-1.603763000
C	-1.368628000	-0.255046000	1.674785000
C	-1.805990000	0.880061000	-1.247020000
C	-2.457070000	-0.007696000	1.001685000
H	-1.000662000	-0.841447000	2.499154000
C	-2.542642000	0.926615000	-0.134517000
H	-1.960072000	1.663162000	-1.980164000
O	-0.024807000	-2.245170000	-0.714388000
Cl	4.581238000	-0.795954000	1.038750000
Cl	3.806654000	2.140521000	-0.008208000
Cl	-3.979948000	-0.832926000	1.453130000
Cl	-3.716214000	2.222982000	0.063157000

O	-2.121527000	-2.224903000	-1.550594000
H	-0.651850000	-0.126949000	-2.695423000

TS1-b:

C	3.154092000	0.773299000	0.217416000
C	1.902355000	1.229747000	0.632104000
C	0.762696000	0.457000000	0.393802000
C	0.925528000	-0.782627000	-0.249900000
C	2.145685000	-1.242224000	-0.686394000
C	3.276158000	-0.451085000	-0.448669000
H	1.821788000	2.191104000	1.121440000
H	2.233705000	-2.195916000	-1.188531000
C	-1.083230000	-1.560890000	0.598325000
C	-0.605826000	0.763134000	0.627158000
C	-2.455390000	-1.413331000	0.589006000
C	-1.677201000	1.509154000	0.371463000
C	-3.258976000	-0.387782000	0.013865000
H	-2.994987000	-2.114829000	1.222176000
C	-2.930427000	0.945031000	-0.071019000
H	-1.655096000	2.598626000	0.451465000
O	-0.247713000	-1.495049000	-0.479350000
Cl	4.824833000	-1.046401000	-0.982628000
Cl	4.550509000	1.773584000	0.540876000
Cl	-4.902738000	-0.902441000	-0.347693000
Cl	-4.088449000	2.120332000	-0.659690000
O	-0.485662000	-2.297895000	1.569779000
H	-1.001809000	-2.238255000	2.382394000

IM1-b:

C	3.098610000	0.780269000	0.134232000
C	1.919650000	1.346541000	0.598984000
C	0.688414000	0.667231000	0.517301000
C	0.705408000	-0.622553000	-0.057303000
C	1.874975000	-1.196346000	-0.520040000
C	3.080186000	-0.502602000	-0.426020000
H	1.943788000	2.336390000	1.034813000
H	1.842106000	-2.181481000	-0.965269000
C	-1.233702000	-1.744680000	0.728676000
C	-0.486259000	1.291793000	1.019793000
C	-2.522300000	-1.407855000	0.873000000
C	-1.779392000	1.528183000	1.032702000

C	-3.168211000	-0.345379000	0.107715000
H	-3.138891000	-1.971775000	1.566125000
C	-2.816493000	0.952393000	0.141297000
H	-2.172594000	2.250078000	1.752876000
O	-0.484005000	-1.290184000	-0.304260000
Cl	4.530575000	-1.263313000	-1.016471000
Cl	4.579928000	1.694422000	0.268462000
Cl	-4.560763000	-0.881326000	-0.833578000
Cl	-3.687737000	2.173529000	-0.772585000
O	-0.546347000	-2.630508000	1.485692000
H	-1.050966000	-2.845961000	2.278901000

TS1-b-1 :

C	3.103656000	0.757431000	0.102862000
C	1.913700000	1.300900000	0.565048000
C	0.708445000	0.567156000	0.538740000
C	0.778180000	-0.741643000	0.002420000
C	1.952225000	-1.296970000	-0.454190000
C	3.132184000	-0.552094000	-0.398114000
H	1.908184000	2.305280000	0.966482000
H	1.951765000	-2.293334000	-0.875151000
C	-1.248961000	-1.723318000	0.735521000
C	-0.481713000	1.088826000	1.080793000
C	-2.667341000	-1.530902000	0.710279000
C	-1.777628000	1.270411000	1.174342000
C	-3.241305000	-0.379481000	0.008555000
H	-3.232898000	-2.458215000	0.668624000
C	-2.803325000	0.886820000	0.161502000
H	-2.182868000	1.751916000	2.068657000
O	-0.422167000	-1.410041000	-0.249137000
Cl	4.603017000	-1.279913000	-0.972089000
Cl	4.549626000	1.730962000	0.170283000
Cl	-4.604845000	-0.730871000	-1.049829000
Cl	-3.511161000	2.247473000	-0.685031000
O	-0.853426000	-2.185739000	1.855763000
H	-2.070968000	-1.872291000	2.075164000

P1-b-1:

C	3.040724000	0.747600000	0.087879000
C	1.873408000	1.284595000	0.608285000
C	0.675590000	0.539535000	0.644678000
C	0.713280000	-0.779246000	0.117458000

C	1.875728000	-1.322795000	-0.388649000
C	3.049379000	-0.566229000	-0.403441000
H	1.879882000	2.291827000	1.002604000
H	1.866783000	-2.325135000	-0.794945000
C	-1.284203000	-1.711525000	1.046277000
C	-0.494968000	1.045377000	1.232573000
C	-2.737450000	-1.647816000	0.625379000
C	-1.798255000	1.180238000	1.302880000
C	-3.154746000	-0.379884000	-0.099179000
H	-2.913007000	-2.495084000	-0.042653000
C	-2.748099000	0.861274000	0.198900000
H	-2.256801000	1.566196000	2.215364000
O	-0.473222000	-1.463172000	-0.046240000
Cl	4.494661000	-1.288656000	-1.047995000
Cl	4.482660000	1.731251000	0.071809000
Cl	-4.340695000	-0.662520000	-1.358924000
Cl	-3.376449000	2.274257000	-0.628778000
O	-0.865583000	-1.994862000	2.127778000
H	-3.351749000	-1.803919000	1.515182000

TS1-b-2 :

C	2.833342000	0.547779000	0.283971000
C	1.732774000	0.917673000	1.039830000
C	0.533183000	0.190023000	0.984534000
C	0.490552000	-0.947347000	0.143755000
C	1.591053000	-1.325376000	-0.613696000
C	2.763618000	-0.584120000	-0.546390000
H	1.799426000	1.780163000	1.689714000
H	1.521864000	-2.189426000	-1.260655000
C	-1.584873000	-1.713088000	0.985777000
C	-0.608520000	0.502571000	1.815204000
C	-2.881588000	-1.320177000	0.688173000
C	-1.848394000	0.925767000	1.519925000
C	-3.052043000	-0.199584000	-0.239460000
H	-3.697963000	-1.646562000	1.322712000
C	-2.438202000	0.942964000	0.137756000
H	-2.571334000	1.062070000	2.323177000
O	-0.684018000	-1.628306000	-0.059473000
Cl	4.123374000	-1.085054000	-1.512283000
Cl	4.287570000	1.507553000	0.389081000
Cl	-4.074981000	-0.336997000	-1.648916000
Cl	-2.396300000	2.407750000	-0.792654000
O	-1.111207000	-1.903916000	2.165395000

H	-0.849876000	-0.756262000	2.482529000
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P1-b-2:

C	3.191068000	0.698875000	0.184387000
C	2.046361000	1.354719000	0.620910000
C	0.768793000	0.804249000	0.438898000
C	0.701067000	-0.449326000	-0.180243000
C	1.824526000	-1.123584000	-0.618481000
C	3.081958000	-0.546743000	-0.444979000
H	2.151478000	2.319246000	1.101874000
H	1.725026000	-2.094166000	-1.084637000
C	-1.101540000	-1.697135000	0.698084000
C	-0.389656000	1.574132000	0.887174000
C	-2.551448000	-1.597954000	0.668971000
C	-1.726256000	1.564499000	0.658723000
C	-3.228120000	-0.518976000	0.159796000
H	-3.098804000	-2.444574000	1.059351000
C	-2.729362000	0.790778000	-0.079158000
H	-2.217698000	2.445140000	1.073786000
O	-0.558080000	-0.976998000	-0.362214000
Cl	4.484173000	-1.409765000	-1.009873000
Cl	4.742232000	1.459372000	0.436090000
Cl	-4.953216000	-0.796591000	-0.115495000
Cl	-3.676012000	1.846312000	-1.104793000
O	-0.435550000	-2.329886000	1.472810000
H	-0.087321000	2.419642000	1.499560000

TS1-c:

C	3.129164000	0.813567000	0.048637000
C	1.815593000	1.197655000	0.295175000
C	0.813048000	0.229093000	0.283043000
C	1.143074000	-1.114218000	0.012513000
C	2.440259000	-1.512728000	-0.251255000
C	3.435851000	-0.533259000	-0.225695000
H	1.593578000	2.236984000	0.499730000
H	2.683259000	-2.544347000	-0.464753000
C	-1.049461000	-1.178699000	0.518636000
C	-0.622204000	0.259985000	0.401011000
C	-2.429175000	-1.518234000	-0.014729000
C	-1.557217000	1.230639000	0.249199000

C	-3.328758000	-0.417296000	-0.223664000
H	-2.518121000	-2.416848000	-0.620401000
C	-2.927392000	0.883961000	-0.005169000
H	-1.289979000	2.279569000	0.216248000
O	0.062032000	-1.942563000	-0.000538000
Cl	5.075851000	-1.029413000	-0.539937000
Cl	4.378167000	2.035937000	0.085374000
Cl	-4.961558000	-0.816697000	-0.679495000
Cl	-4.048452000	2.207549000	-0.150272000
O	-1.388425000	-1.609760000	1.810969000
H	-2.582425000	-1.934952000	1.193128000

IM1-c:

C	3.126506000	0.816577000	-0.022963000
C	1.798731000	1.206599000	0.130486000
C	0.807656000	0.230475000	0.164413000
C	1.153029000	-1.130267000	0.045803000
C	2.467363000	-1.535027000	-0.100719000
C	3.453791000	-0.545799000	-0.137431000
H	1.560248000	2.258131000	0.224210000
H	2.729670000	-2.580403000	-0.185998000
C	-1.072183000	-1.163493000	0.482741000
C	-0.632010000	0.278206000	0.242171000
C	-2.329742000	-1.577835000	-0.264400000
C	-1.596085000	1.224836000	0.082726000
C	-3.343775000	-0.458717000	-0.216027000
H	-2.107004000	-1.826200000	-1.309397000
C	-2.983219000	0.836688000	-0.027457000
H	-1.350153000	2.270978000	-0.056325000
O	0.083658000	-1.969152000	0.066219000
Cl	5.110294000	-1.053466000	-0.327588000
Cl	4.360908000	2.054176000	-0.063360000
Cl	-4.979757000	-0.923683000	-0.535534000
Cl	-4.149384000	2.136196000	-0.024550000
O	-1.209913000	-1.076756000	1.810188000
H	-2.738119000	-2.473503000	0.207742000

TS1-c-1 :

C	3.095797000	0.826652000	0.001497000
C	1.771397000	1.193374000	0.200588000
C	0.797893000	0.199217000	0.313045000
C	1.164142000	-1.159974000	0.195383000

C	2.481031000	-1.538981000	-0.020231000
C	3.444467000	-0.535201000	-0.109907000
H	1.516288000	2.242352000	0.278792000
H	2.755668000	-2.580533000	-0.113123000
C	-1.060093000	-1.226474000	0.695805000
C	-0.634803000	0.234398000	0.416406000
C	-2.249927000	-1.336095000	-0.858720000
C	-1.540912000	1.218012000	0.182572000
C	-3.255894000	-0.357463000	-0.540454000
H	-1.516591000	-1.046552000	-1.606716000
C	-2.911439000	0.902690000	-0.102685000
H	-1.239723000	2.259893000	0.157155000
O	0.129492000	-2.019497000	0.282449000
Cl	5.099065000	-1.011597000	-0.369446000
Cl	4.305640000	2.082559000	-0.109541000
Cl	-4.916023000	-0.870273000	-0.572495000
Cl	-4.088962000	2.159444000	0.132261000
O	-1.673318000	-1.624075000	1.665648000
H	-2.570216000	-2.369791000	-0.913910000

P1-c-1:

C	-3.083365000	0.818241000	0.034826000
C	-1.714737000	1.046929000	-0.002183000
C	-0.844768000	-0.047409000	-0.104966000
C	-1.384742000	-1.349602000	-0.156562000
C	-2.738104000	-1.600371000	-0.114067000
C	-3.593728000	-0.496440000	-0.018963000
H	-1.344779000	2.062575000	0.051609000
H	-3.132125000	-2.606281000	-0.154749000
C	0.839395000	-1.634711000	-0.278648000
C	0.574918000	-0.184769000	-0.143628000
C	3.424201000	-0.679229000	1.838688000
C	1.503930000	0.883206000	-0.187615000
C	3.668595000	-0.169338000	0.633988000
H	2.585665000	-0.317277000	2.420602000
C	2.852860000	0.887299000	0.029515000
H	1.074743000	1.848457000	-0.440903000
O	-0.412883000	-2.296662000	-0.252552000
Cl	-5.306437000	-0.794372000	0.031359000
Cl	-4.156040000	2.191875000	0.157711000
Cl	5.055384000	-0.704819000	-0.305082000
Cl	3.717143000	2.369785000	-0.342649000
O	1.847202000	-2.257424000	-0.437505000

H	4.044384000	-1.459596000	2.258814000
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TS1-c-2 :

C	3.175283000	0.827922000	-0.010187000
C	1.854838000	1.258410000	0.028100000
C	0.812993000	0.324445000	-0.028237000
C	1.125635000	-1.050328000	-0.096076000
C	2.438274000	-1.488403000	-0.124859000
C	3.464326000	-0.544127000	-0.091356000
H	1.641376000	2.316739000	0.096146000
H	2.662487000	-2.545155000	-0.171808000
C	-1.125754000	-1.410076000	0.440534000
C	-0.582962000	0.575116000	-0.024410000
C	-2.314825000	-1.502183000	-0.507219000
C	-1.635196000	1.358189000	-0.183357000
C	-3.342657000	-0.426887000	-0.254706000
H	-1.956708000	-1.448581000	-1.539874000
C	-3.013719000	0.873180000	-0.122428000
H	-1.504221000	2.416745000	-0.413550000
O	0.079322000	-1.916980000	-0.174454000
Cl	5.108961000	-1.114410000	-0.139839000
Cl	4.446954000	2.024542000	0.048959000
Cl	-4.996457000	-0.965156000	-0.207491000
Cl	-4.218935000	2.121750000	0.089405000
O	-1.204594000	-1.352869000	1.648474000
H	-2.767070000	-2.486845000	-0.365450000

P1-c-2:

C	-3.011587000	0.865516000	-0.095654000
C	-1.766322000	1.397431000	0.186741000
C	-0.702382000	0.561157000	0.622175000
C	-0.966487000	-0.843777000	0.695973000
C	-2.203586000	-1.368714000	0.419103000
C	-3.247228000	-0.515394000	0.035118000
H	-1.605706000	2.463173000	0.099399000
H	-2.362389000	-2.437336000	0.470570000
C	1.089511000	-1.769300000	0.067391000
C	0.535078000	1.021491000	1.005687000
C	2.482768000	-1.654209000	0.661981000
C	1.797861000	1.236926000	1.258111000
C	3.211620000	-0.452462000	0.077227000
H	2.413181000	-1.565875000	1.746054000

C	2.912055000	0.824438000	0.365604000
H	2.098231000	1.773864000	2.162031000
O	0.109501000	-1.638039000	1.052091000
Cl	-4.805736000	-1.210069000	-0.298497000
Cl	-4.284248000	1.948659000	-0.603871000
Cl	4.522493000	-0.852330000	-1.005922000
Cl	3.868639000	2.165203000	-0.232998000
O	0.828955000	-1.908268000	-1.088222000
H	3.041716000	-2.556867000	0.416141000

TS1-c-3 :

C	3.087529000	0.826205000	0.013308000
C	1.767714000	1.173456000	0.217837000
C	0.788023000	0.170947000	0.223607000
C	1.150344000	-1.203931000	0.044690000
C	2.493580000	-1.548674000	-0.164414000
C	3.441327000	-0.539544000	-0.178716000
H	1.505175000	2.212752000	0.368648000
H	2.781308000	-2.581424000	-0.303619000
C	-1.151382000	-1.184375000	0.612219000
C	-0.622491000	0.208848000	0.319120000
C	-2.346498000	-1.593109000	-0.234912000
C	-1.565626000	1.204661000	0.152114000
C	-3.329945000	-0.446826000	-0.226713000
H	-2.076074000	-1.828464000	-1.272043000
C	-2.937862000	0.855472000	-0.015764000
H	-1.288515000	2.247391000	0.048782000
O	0.159085000	-2.056491000	0.082935000
Cl	5.104146000	-0.981114000	-0.437445000
Cl	4.301360000	2.080801000	-0.009501000
Cl	-4.961236000	-0.845207000	-0.614378000
Cl	-4.079196000	2.173321000	-0.075829000
O	-1.280930000	-1.241222000	1.880368000
H	-2.801673000	-2.479951000	0.209163000

P1-c-3:

C	2.935432000	0.772829000	0.284909000
C	1.534595000	0.794116000	0.396811000
C	0.759992000	-0.258810000	-0.041967000
C	1.409027000	-1.412318000	-0.679904000
C	2.859506000	-1.407296000	-0.742875000
C	3.595398000	-0.349184000	-0.282880000

H	1.074178000	1.651019000	0.872804000
H	3.336529000	-2.268123000	-1.192751000
C	-1.367002000	-1.393760000	0.773163000
C	-0.705704000	-0.260379000	0.071141000
C	-2.873267000	-1.534734000	0.575523000
C	-1.471788000	0.771692000	-0.358410000
C	-3.597623000	-0.293198000	0.158600000
H	-3.011637000	-2.299896000	-0.203371000
C	-2.921497000	0.787439000	-0.273573000
H	-1.007118000	1.637986000	-0.815819000
O	0.749056000	-2.331720000	-1.193892000
Cl	5.336265000	-0.387452000	-0.405674000
Cl	3.827066000	2.131779000	0.878376000
Cl	-5.330428000	-0.360162000	0.221971000
Cl	-3.711068000	2.252442000	-0.803919000
O	-0.762149000	-2.154425000	1.496812000
H	-3.300830000	-1.952520000	1.489728000

TS1-d:

C	3.044676000	0.795618000	0.036537000
C	1.759672000	1.160901000	0.435427000
C	0.764417000	0.193455000	0.468229000
C	1.060020000	-1.133541000	0.123098000
C	2.330337000	-1.518851000	-0.265209000
C	3.323878000	-0.537167000	-0.308404000
H	1.560488000	2.189592000	0.707161000
H	2.553133000	-2.543307000	-0.529400000
C	-1.101224000	-1.220066000	0.772946000
C	-0.665388000	0.240978000	0.838170000
C	-2.381669000	-1.521999000	0.083671000
C	-1.643078000	1.252454000	0.487751000
C	-3.214553000	-0.516312000	-0.231609000
H	-2.627379000	-2.553367000	-0.132479000
C	-2.860982000	0.888865000	0.014448000
H	-1.406910000	2.299083000	0.631662000
O	-0.013086000	-1.970075000	0.186579000
Cl	4.924169000	-1.017153000	-0.805130000
Cl	4.283651000	2.027202000	-0.015512000
Cl	-4.752252000	-0.881776000	-0.979238000
Cl	-4.025929000	2.133854000	-0.340758000
O	-1.132241000	-1.326565000	2.173254000
H	-0.717188000	0.018956000	2.104902000

IM1-d:

C	2.877603000	0.807171000	0.116731000
C	1.622050000	1.066106000	0.676850000
C	0.700592000	0.039465000	0.770261000
C	1.026597000	-1.238559000	0.315583000
C	2.264264000	-1.521800000	-0.237862000
C	3.191654000	-0.480645000	-0.332639000
H	1.398930000	2.066817000	1.025453000
H	2.511259000	-2.515176000	-0.586115000
C	-1.169544000	-1.450443000	0.933566000
C	-0.689516000	-0.030895000	1.367442000
C	-2.221908000	-1.482534000	-0.147220000
C	-1.634930000	1.073805000	1.001972000
C	-2.971126000	-0.387626000	-0.427399000
H	-2.385550000	-2.437453000	-0.624044000
C	-2.703755000	0.902498000	0.206041000
H	-1.433240000	2.058073000	1.408047000
O	0.034908000	-2.155144000	0.478482000
Cl	4.750900000	-0.835566000	-1.034865000
Cl	4.023638000	2.123223000	-0.003727000
Cl	-4.209287000	-0.509042000	-1.636939000
Cl	-3.767615000	2.249796000	-0.119432000
O	-1.883320000	-2.142255000	1.817589000
H	-0.615794000	-0.055312000	2.462515000

TS1-d-1 :

C	2.569004000	-0.821042000	-0.377754000
C	1.320656000	-0.811422000	-1.009363000
C	0.539489000	0.326760000	-0.932696000
C	0.998285000	1.434825000	-0.225013000
C	2.224065000	1.455818000	0.411709000
C	3.015583000	0.306643000	0.322933000
H	0.990219000	-1.692957000	-1.543878000
H	2.564839000	2.323041000	0.960237000
C	-1.109205000	2.030989000	-0.808547000
C	-0.802685000	0.685131000	-1.528411000
C	-1.960755000	1.284813000	0.940774000
C	-1.891613000	-0.351229000	-1.504324000
C	-2.548031000	0.116713000	0.828156000
H	-1.774681000	2.009737000	1.714314000
C	-2.668116000	-0.611703000	-0.447594000
H	-2.056526000	-0.910637000	-2.416559000

O	0.106063000	2.477824000	-0.219866000
Cl	4.568855000	0.319491000	1.118519000
Cl	3.543268000	-2.267505000	-0.488145000
Cl	-3.147369000	-0.656269000	2.307197000
Cl	-3.914140000	-1.832494000	-0.572915000
O	-1.987065000	2.826270000	-1.074867000
H	-0.656325000	0.985488000	-2.574624000

P1-d-1:

C	2.184978000	-0.534917000	-0.700718000
C	0.899822000	-0.317759000	-1.209217000
C	0.196289000	0.798759000	-0.796189000
C	0.777838000	1.680683000	0.107215000
C	2.041332000	1.499667000	0.629109000
C	2.748692000	0.367663000	0.210055000
H	0.477104000	-1.030124000	-1.905990000
H	2.474187000	2.196828000	1.333073000
C	-1.250323000	2.596077000	-0.255327000
C	-1.152896000	1.354512000	-1.176431000
C	-1.802269000	0.208775000	2.003210000
C	-2.372645000	0.460025000	-1.143629000
C	-1.950914000	-0.669116000	1.054935000
H	-1.377088000	0.357744000	2.980188000
C	-2.685113000	-0.431401000	-0.200268000
H	-3.055105000	0.563129000	-1.978623000
O	-0.050109000	2.738186000	0.429975000
Cl	4.348845000	0.117627000	0.858480000
Cl	3.055988000	-1.953745000	-1.228416000
Cl	-1.257364000	-2.316543000	1.246846000
Cl	-4.127474000	-1.421914000	-0.395033000
O	-2.146497000	3.365717000	-0.125879000
H	-1.094920000	1.771175000	-2.189782000

TS1-d-2 :

C	2.512687000	-0.830993000	-0.335759000
C	1.255080000	-0.854545000	-0.938690000
C	0.480410000	0.298004000	-0.942301000
C	0.934712000	1.444304000	-0.283567000
C	2.182336000	1.488918000	0.322162000
C	2.974722000	0.342425000	0.281306000
H	0.913895000	-1.760328000	-1.422892000
H	2.523122000	2.379902000	0.831232000

C	-1.325014000	2.000029000	-0.570616000
C	-0.834839000	0.523428000	-1.608216000
C	-1.872520000	1.357768000	0.697301000
C	-1.876549000	-0.496816000	-1.549580000
C	-2.421590000	0.137893000	0.761127000
H	-1.801450000	1.978300000	1.582616000
C	-2.571265000	-0.726727000	-0.416276000
H	-2.167147000	-1.007206000	-2.461444000
O	0.050335000	2.464330000	-0.246001000
Cl	4.543664000	0.400160000	1.040429000
Cl	3.488366000	-2.279083000	-0.384846000
Cl	-3.036920000	-0.433449000	2.298218000
Cl	-3.800317000	-1.959330000	-0.397398000
O	-2.008464000	2.776102000	-1.242345000
H	-0.743892000	1.002675000	-2.582946000

P1-d-2:

C	2.774927000	-0.825453000	-0.215485000
C	1.628063000	-1.375313000	-0.771169000
C	0.486343000	-0.603450000	-1.051174000
C	0.576834000	0.775073000	-0.794313000
C	1.725227000	1.342645000	-0.261592000
C	2.824894000	0.548320000	0.050330000
H	1.608139000	-2.438625000	-0.974844000
H	1.770827000	2.413677000	-0.113006000
C	-1.389995000	2.064244000	-0.321821000
C	-0.660120000	-1.254135000	-1.675083000
C	-1.571542000	1.220965000	0.899834000
C	-2.022159000	-1.153805000	-1.421047000
C	-2.195041000	0.044442000	0.849773000
H	-1.254950000	1.649753000	1.843198000
C	-2.721113000	-0.593286000	-0.359682000
H	-2.654043000	-1.678037000	-2.131564000
O	-0.428127000	1.646062000	-1.208641000
Cl	4.239001000	1.300004000	0.733100000
Cl	4.129285000	-1.869415000	0.130374000
Cl	-2.500046000	-0.827802000	2.357099000
Cl	-4.466142000	-0.759026000	-0.375947000
O	-2.027659000	3.046655000	-0.554999000
H	-0.397237000	-1.973909000	-2.444736000

TS1-d-3 :

C	2.996386000	0.671107000	0.265369000
C	1.772256000	0.923350000	0.894591000
C	0.723360000	0.043941000	0.714932000
C	0.898383000	-1.125541000	-0.055295000
C	2.127126000	-1.398254000	-0.673509000
C	3.161838000	-0.487206000	-0.521962000
H	1.670899000	1.809856000	1.508645000
H	2.258704000	-2.296829000	-1.260319000
C	-1.245258000	-1.379988000	1.008046000
C	-0.673837000	0.062629000	1.283011000
C	-2.540923000	-1.457340000	0.274111000
C	-1.481343000	1.171344000	0.667064000
C	-3.202001000	-0.361099000	-0.148325000
H	-2.942414000	-2.452124000	0.140396000
C	-2.646690000	0.981360000	0.028160000
H	-1.083781000	2.175790000	0.754831000
O	-0.143756000	-1.928551000	-0.095149000
Cl	4.678964000	-0.814137000	-1.317969000
Cl	4.292067000	1.813561000	0.479774000
Cl	-4.723169000	-0.553078000	-0.971947000
Cl	-3.510811000	2.358171000	-0.612789000
O	-1.245293000	-2.192744000	2.002427000
H	-0.656653000	0.191063000	2.370901000

P1-d-3:

C	-3.128640000	0.176493000	0.624373000
C	-1.837370000	0.523330000	1.072452000
C	-0.724034000	0.263959000	0.313776000
C	-0.875692000	-0.374281000	-0.993655000
C	-2.218583000	-0.720765000	-1.419107000
C	-3.308645000	-0.452016000	-0.634631000
H	-1.748732000	1.011416000	2.035480000
H	-2.326041000	-1.194630000	-2.386006000
C	1.283777000	1.710415000	-0.163671000
C	0.671715000	0.633878000	0.760024000
C	2.697827000	1.570528000	-0.508389000
C	1.544210000	-0.570082000	0.993121000
C	3.415491000	0.483501000	-0.157902000
H	3.136425000	2.368092000	-1.093600000
C	2.820482000	-0.625590000	0.596300000
H	1.113860000	-1.402095000	1.537316000
O	0.111801000	-0.606660000	-1.716041000
Cl	-4.904207000	-0.884472000	-1.193006000

Cl	-4.474102000	0.540524000	1.645786000
Cl	5.088446000	0.382329000	-0.626202000
Cl	3.783015000	-2.041296000	0.953644000
O	0.615516000	2.657586000	-0.532047000
H	0.579130000	1.143124000	1.731615000

TS1-e:

C	3.025003000	0.797413000	0.161970000
C	1.714026000	1.059567000	0.515610000
C	0.743025000	0.065483000	0.366108000
C	1.086715000	-1.217301000	-0.195409000
C	2.433759000	-1.471150000	-0.531878000
C	3.376371000	-0.475468000	-0.361898000
H	1.459459000	2.025615000	0.933236000
H	2.713541000	-2.431537000	-0.942622000
C	-1.232945000	-1.231785000	0.719551000
C	-0.674326000	0.112434000	0.556192000
C	-2.565698000	-1.468820000	0.237703000
C	-1.533962000	1.172392000	0.275357000
C	-3.357627000	-0.405361000	-0.095604000
H	-2.966510000	-2.474667000	0.237811000
C	-2.868329000	0.938981000	-0.020251000
H	-1.140831000	2.176316000	0.173317000
O	0.117943000	-2.052774000	-0.396694000
Cl	5.028497000	-0.816386000	-0.807377000
Cl	4.228619000	2.041045000	0.393588000
Cl	-5.005916000	-0.708941000	-0.576654000
Cl	-3.898213000	2.285826000	-0.403775000
O	-0.837417000	-1.873010000	1.855482000
H	-1.186722000	-2.773999000	1.864936000

P1-e:

C	2.886215000	0.764761000	0.349201000
C	1.485960000	0.744294000	0.465371000
C	0.728514000	-0.290971000	-0.042408000
C	1.401432000	-1.379134000	-0.766339000
C	2.852327000	-1.332843000	-0.834004000
C	3.568498000	-0.295969000	-0.301235000
H	1.007223000	1.558243000	0.995725000
H	3.345304000	-2.146972000	-1.349025000
C	-1.428353000	-1.365949000	0.677897000

C	-0.743071000	-0.291288000	0.080465000
C	-2.818464000	-1.354695000	0.751805000
C	-1.491621000	0.786799000	-0.395649000
C	-3.546772000	-0.280187000	0.247517000
H	-3.347738000	-2.177757000	1.217748000
C	-2.881332000	0.806315000	-0.323503000
H	-0.984251000	1.618075000	-0.868559000
O	0.770377000	-2.282334000	-1.341357000
Cl	5.310114000	-0.286727000	-0.433920000
Cl	3.748805000	2.099147000	1.036078000
Cl	-5.286624000	-0.328425000	0.362456000
Cl	-3.745065000	2.183343000	-0.965166000
O	-0.685095000	-2.362450000	1.226783000
H	-1.245682000	-3.104867000	1.475388000

RC2:

C	3.204528000	0.806064000	0.052674000
C	1.883160000	1.240982000	0.080615000
C	0.864137000	0.302764000	-0.072552000
C	1.201500000	-1.047983000	-0.249587000
C	2.503861000	-1.507280000	-0.282201000
C	3.512566000	-0.557217000	-0.126692000
H	1.671770000	2.292964000	0.220720000
H	2.738847000	-2.553878000	-0.417670000
C	-0.984978000	-0.992706000	-0.287993000
C	-0.584881000	0.340075000	-0.101809000
C	-2.315631000	-1.384757000	-0.357080000
C	-1.557942000	1.330571000	0.004430000
C	-3.278900000	-0.369932000	-0.267820000
H	-2.599474000	-2.410472000	-0.538982000
C	-2.902877000	0.970751000	-0.078913000
H	-1.296100000	2.370396000	0.150856000
O	0.082932000	-1.835962000	-0.387366000
Cl	5.168053000	-1.106533000	-0.159739000
Cl	4.472078000	1.994490000	0.247428000
Cl	-4.956486000	-0.825701000	-0.396173000
Cl	-4.105463000	2.232613000	0.052583000
O	-2.171878000	-2.151089000	1.979198000
H	-2.899825000	-1.603380000	2.322308000

TS2:

C	3.218283000	0.799988000	0.051230000
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C	1.897056000	1.235988000	0.088650000
C	0.875799000	0.296155000	-0.036427000
C	1.212738000	-1.056626000	-0.195395000
C	2.513697000	-1.517617000	-0.239656000
C	3.524828000	-0.565549000	-0.111444000
H	1.687660000	2.290182000	0.213965000
H	2.747698000	-2.565664000	-0.365910000
C	-0.977303000	-0.993396000	-0.217326000
C	-0.574376000	0.334183000	-0.052190000
C	-2.319277000	-1.404817000	-0.226610000
C	-1.546609000	1.331088000	0.034311000
C	-3.281471000	-0.357408000	-0.228488000
H	-2.600726000	-2.387908000	-0.572844000
C	-2.896670000	0.973488000	-0.057400000
H	-1.282725000	2.372296000	0.164462000
O	0.088465000	-1.846236000	-0.306502000
Cl	5.179370000	-1.115846000	-0.158528000
Cl	4.487560000	1.990643000	0.211639000
Cl	-4.943855000	-0.811088000	-0.383625000
Cl	-4.085834000	2.250641000	0.020897000
O	-2.528770000	-2.018980000	1.704929000
H	-1.742736000	-2.583993000	1.780882000

IM2:

C	3.234587000	0.800174000	0.037927000
C	1.914756000	1.240034000	0.072657000
C	0.891063000	0.297046000	-0.006779000
C	1.227331000	-1.060778000	-0.118551000
C	2.527514000	-1.525845000	-0.157315000
C	3.539772000	-0.570966000	-0.075933000
H	1.708300000	2.298527000	0.161125000
H	2.759670000	-2.578307000	-0.244502000
C	-0.957314000	-0.977542000	-0.113237000
C	-0.560487000	0.333388000	-0.006022000
C	-2.353675000	-1.484138000	-0.094995000
C	-1.528954000	1.362612000	0.062384000
C	-3.304910000	-0.308731000	-0.121358000
H	-2.544466000	-2.112572000	-0.977431000
C	-2.891556000	1.000432000	-0.012184000
H	-1.256006000	2.403618000	0.158974000
O	0.096906000	-1.842856000	-0.186275000
Cl	5.195241000	-1.124152000	-0.119094000
Cl	4.507452000	1.994994000	0.141371000

Cl	-4.972884000	-0.745417000	-0.274648000
Cl	-4.057225000	2.308296000	0.014658000
O	-2.621071000	-2.263196000	1.088076000
H	-2.336889000	-3.170220000	0.928976000

TS2-a:

C	3.138262000	0.766381000	0.171304000
C	1.812393000	1.053499000	0.486535000
C	0.857245000	0.048277000	0.362215000
C	1.253933000	-1.217144000	-0.088901000
C	2.559261000	-1.527028000	-0.420822000
C	3.508138000	-0.513830000	-0.280731000
H	1.551002000	2.046990000	0.827154000
H	2.842315000	-2.510169000	-0.770588000
C	-0.910786000	-1.400707000	0.326876000
C	-0.593994000	-0.016173000	0.507200000
C	-2.051317000	-2.116828000	0.580616000
C	-1.484707000	1.031645000	0.425156000
C	-3.458111000	-0.223749000	-0.345437000
H	-2.150915000	-3.114631000	0.161568000
C	-2.842449000	0.924232000	-0.004025000
H	-1.100669000	2.038269000	0.538066000
O	0.200757000	-2.089697000	-0.155424000
Cl	5.166503000	-0.883332000	-0.680066000
Cl	4.327657000	2.035844000	0.350512000
Cl	-5.064699000	-0.471899000	-0.839292000
Cl	-3.661275000	2.496774000	-0.266235000
O	-2.850904000	-1.802778000	1.631781000
H	-3.726942000	-2.187682000	1.509382000

IM2-a:

C	-3.083987000	0.852431000	0.016529000
C	-1.713333000	1.061242000	-0.119489000
C	-0.859937000	-0.037789000	-0.146360000
C	-1.397657000	-1.320256000	-0.021977000
C	-2.752379000	-1.559341000	0.125360000
C	-3.598199000	-0.449914000	0.140636000
H	-1.340615000	2.074019000	-0.203175000
H	-3.147268000	-2.561029000	0.222651000
C	0.793567000	-1.635577000	-0.287374000
C	0.599072000	-0.184012000	-0.225402000
C	1.800776000	-2.450920000	-0.645485000

C	1.463542000	0.868031000	-0.190679000
C	3.615698000	0.012231000	0.687775000
H	1.632129000	-3.521559000	-0.658583000
C	2.892142000	0.894648000	0.020668000
H	1.019272000	1.855479000	-0.263386000
O	-0.438016000	-2.283919000	-0.052272000
Cl	-5.312714000	-0.728523000	0.317800000
Cl	-4.141053000	2.246708000	0.035287000
Cl	5.216580000	-0.186021000	1.123949000
Cl	3.708904000	2.361842000	-0.620454000
O	3.019822000	-1.992854000	-1.021564000
H	3.607013000	-2.735484000	-1.193916000

TS2-a-1: :

C	-3.058755000	0.862929000	-0.014845000
C	-1.690628000	1.044020000	-0.201594000
C	-0.853798000	-0.068454000	-0.198484000
C	-1.405226000	-1.335410000	0.006553000
C	-2.757242000	-1.546170000	0.207090000
C	-3.586648000	-0.424387000	0.191121000
H	-1.307185000	2.045339000	-0.350236000
H	-3.162394000	-2.535704000	0.366589000
C	0.762995000	-1.703652000	-0.325499000
C	0.599026000	-0.245693000	-0.299788000
C	1.764726000	-2.508674000	-0.715160000
C	1.487330000	0.788055000	-0.277476000
C	3.653130000	-0.067032000	0.611457000
H	1.647417000	-3.588335000	-0.674555000
C	2.909031000	0.827457000	-0.028551000
H	1.055823000	1.779720000	-0.368275000
O	-0.458970000	-2.315881000	-0.006677000
Cl	-5.297505000	-0.666739000	0.432694000
Cl	-4.096002000	2.270861000	-0.037429000
Cl	5.203141000	-0.111549000	1.247989000
Cl	3.701693000	2.341759000	-0.568037000
O	2.894477000	-2.010500000	-1.282377000
H	3.646083000	-2.011538000	-0.668735000

P2-a-1:

C	-3.027053000	-0.886159000	0.038988000
C	-1.655586000	-1.053930000	-0.098372000
C	-0.843891000	0.081454000	-0.162418000

C	-1.434483000	1.344398000	-0.067933000
C	-2.797707000	1.543704000	0.080565000
C	-3.595031000	0.405484000	0.129199000
H	-1.244941000	-2.053921000	-0.147882000
H	-3.228594000	2.532632000	0.152976000
C	0.736839000	1.696952000	-0.279781000
C	0.592010000	0.300787000	-0.280245000
C	1.807702000	2.632910000	-0.579794000
C	1.512073000	-0.769535000	-0.421993000
C	3.531042000	0.031535000	0.735320000
H	1.467199000	3.685583000	-0.586152000
C	2.882168000	-0.837438000	-0.094895000
H	1.083758000	-1.695799000	-0.789059000
O	-0.493525000	2.319790000	-0.137366000
Cl	-5.316909000	0.614976000	0.307732000
Cl	-4.035840000	-2.310937000	0.109074000
Cl	5.192578000	-0.045307000	1.143888000
Cl	3.744357000	-2.227833000	-0.743724000
O	2.961392000	2.333437000	-0.827823000
H	2.999982000	0.839447000	1.211283000

TS2-b:

C	3.143502000	0.794257000	-0.012810000
C	1.792491000	1.116056000	0.075893000
C	0.852765000	0.083389000	0.059709000
C	1.312495000	-1.236831000	-0.045477000
C	2.643128000	-1.586972000	-0.153840000
C	3.568459000	-0.544350000	-0.128562000
H	1.499229000	2.155067000	0.150550000
H	2.962792000	-2.615834000	-0.245547000
C	-0.873110000	-1.347862000	0.015425000
C	-0.598596000	-0.004833000	0.133608000
C	-3.209603000	-1.509809000	0.744175000
C	-1.558044000	1.058820000	0.266121000
C	-3.493563000	-0.412670000	-0.019259000
H	-3.536029000	-2.492882000	0.422218000
C	-2.899402000	0.887787000	0.180418000
H	-1.179472000	2.067530000	0.389167000
O	0.237959000	-2.111099000	-0.057582000
Cl	5.265362000	-0.947697000	-0.237765000
Cl	4.307085000	2.101541000	0.014319000
Cl	-4.482066000	-0.666951000	-1.445612000
Cl	-3.963920000	2.289335000	0.167996000

O	-2.801061000	-1.373254000	2.026417000
H	-2.474653000	-2.216831000	2.358582000

IM2-b:

C	3.165751000	0.772747000	-0.007086000
C	1.806340000	1.067305000	0.038028000
C	0.890538000	0.014146000	-0.002240000
C	1.382770000	-1.295559000	-0.087101000
C	2.722674000	-1.620319000	-0.142492000
C	3.623324000	-0.557471000	-0.097094000
H	1.489064000	2.099875000	0.100846000
H	3.066328000	-2.642941000	-0.213527000
C	-0.778353000	-1.433939000	-0.069749000
C	-0.567071000	-0.091009000	0.029536000
C	-3.650176000	-1.324121000	0.970123000
C	-1.520171000	0.993280000	0.120197000
C	-3.578968000	-0.399866000	-0.000822000
H	-4.198752000	-2.247028000	0.815791000
C	-2.856102000	0.864982000	0.086645000
H	-1.109019000	1.993105000	0.203106000
O	0.324516000	-2.190800000	-0.121793000
Cl	5.330846000	-0.924112000	-0.152227000
Cl	4.299671000	2.104265000	0.047034000
Cl	-4.468475000	-0.708717000	-1.494636000
Cl	-3.864648000	2.315658000	0.122192000
O	-3.069570000	-1.134969000	2.179414000
H	-3.186216000	-1.918523000	2.724976000

TS2-b-1 :

C	3.163059000	0.784265000	0.040508000
C	1.797201000	1.001474000	0.179898000
C	0.934163000	-0.094230000	0.099261000
C	1.479136000	-1.366862000	-0.116207000
C	2.830903000	-1.619436000	-0.233766000
C	3.678024000	-0.515041000	-0.163403000
H	1.433373000	2.006732000	0.346966000
H	3.220523000	-2.616137000	-0.387122000
C	-0.663244000	-1.638171000	0.112624000
C	-0.515841000	-0.267391000	0.151793000
C	-3.794073000	-1.493794000	0.671543000
C	-1.474681000	0.798849000	0.281358000
C	-3.717350000	-0.357395000	-0.052037000

H	-4.592595000	-2.198573000	0.469069000
C	-2.820631000	0.771052000	0.146175000
H	-1.042681000	1.770449000	0.491941000
O	0.469823000	-2.312632000	-0.131793000
Cl	5.391223000	-0.783294000	-0.342905000
Cl	4.233487000	2.162035000	0.132963000
Cl	-4.929153000	-0.177260000	-1.331830000
Cl	-3.638518000	2.336931000	0.269312000
O	-3.006040000	-1.879190000	1.687568000
H	-2.078536000	-1.600819000	1.558268000

P2-b-1:

C	3.136794000	0.786102000	0.177290000
C	1.762388000	1.003345000	0.160915000
C	0.922303000	-0.052338000	-0.191875000
C	1.491283000	-1.289530000	-0.503683000
C	2.849326000	-1.540463000	-0.493700000
C	3.677738000	-0.475337000	-0.145980000
H	1.376548000	1.979014000	0.426010000
H	3.258182000	-2.510857000	-0.738765000
C	-0.673102000	-1.548036000	-0.697184000
C	-0.520381000	-0.230539000	-0.314488000
C	-3.313414000	-1.424666000	1.236701000
C	-1.490590000	0.793164000	-0.161302000
C	-3.695033000	-0.345691000	0.309734000
H	-4.146318000	-2.116754000	1.457344000
C	-2.887781000	0.711085000	-0.107733000
H	-1.098924000	1.804324000	-0.183924000
O	0.508723000	-2.197569000	-0.819412000
Cl	5.401355000	-0.749242000	-0.121100000
Cl	4.179046000	2.118643000	0.617744000
Cl	-5.402436000	-0.359319000	-0.064638000
Cl	-3.688164000	2.208654000	-0.616403000
O	-2.224627000	-1.560846000	1.756862000
H	-1.546062000	-2.129489000	-0.937670000

TS2-b-2 :

C	3.307334000	0.488499000	-0.120088000
C	1.982064000	0.899019000	-0.014568000
C	0.972787000	-0.065679000	-0.054686000
C	1.341465000	-1.416338000	-0.202493000
C	2.647761000	-1.849749000	-0.310765000

C	3.640920000	-0.872318000	-0.266667000
H	1.759435000	1.952093000	0.096146000
H	2.898219000	-2.895462000	-0.425156000
C	-0.834183000	-1.383568000	-0.091788000
C	-0.472215000	-0.077721000	0.022677000
C	-3.462129000	-1.845155000	1.044505000
C	-1.533982000	0.896140000	0.166212000
C	-3.019148000	-1.059130000	0.004508000
H	-3.847374000	-2.843316000	0.871690000
C	-2.779884000	0.399540000	0.157323000
H	-1.344933000	1.956078000	0.275884000
O	0.217742000	-2.224732000	-0.223117000
Cl	5.307681000	-1.385730000	-0.398970000
Cl	4.557275000	1.714503000	-0.065997000
Cl	-3.534771000	-1.597518000	-1.612671000
Cl	-4.204781000	1.408333000	0.314158000
O	-3.316511000	-1.422051000	2.311900000
H	-3.582397000	-2.111210000	2.929956000

P2-b-2:

C	3.444240000	0.653579000	-0.091973000
C	2.232812000	1.343558000	-0.112437000
C	1.041025000	0.630368000	0.013769000
C	1.105093000	-0.774996000	0.159204000
C	2.283487000	-1.478541000	0.182181000
C	3.471389000	-0.742964000	0.053866000
H	2.233453000	2.419486000	-0.225883000
H	2.307062000	-2.553725000	0.293420000
C	-1.033137000	-0.322858000	0.205794000
C	-0.357921000	0.957411000	0.039055000
C	-3.399319000	-1.253884000	0.414265000
C	-1.329250000	1.936908000	-0.020676000
C	-2.396371000	-0.186308000	0.261718000
H	-2.916351000	-2.217894000	0.571687000
C	-2.574402000	1.245494000	0.109571000
H	-1.224982000	3.003131000	-0.138687000
O	-0.156629000	-1.358222000	0.275450000
Cl	4.976295000	-1.618651000	0.080482000
Cl	4.922999000	1.570752000	-0.252001000
Cl	-4.313204000	-1.561759000	-1.221845000
Cl	-4.087320000	2.041673000	0.063241000
O	-4.321397000	-0.941433000	1.396664000
H	-4.979956000	-1.644614000	1.448600000

TS2-c:

C	3.211015000	0.798147000	-0.026024000
C	1.886034000	1.213954000	0.047204000
C	0.879957000	0.246923000	0.065800000
C	1.242654000	-1.108921000	0.007508000
C	2.550195000	-1.549721000	-0.066464000
C	3.542344000	-0.571989000	-0.082309000
H	1.661993000	2.271704000	0.089720000
H	2.800548000	-2.600757000	-0.109228000
C	-0.935717000	-1.068163000	0.114953000
C	-0.566401000	0.246175000	0.128386000
C	-2.325629000	-1.559319000	0.183878000
C	-1.561736000	1.283967000	0.158649000
C	-3.347403000	-0.422623000	0.052769000
H	-2.506200000	-2.408315000	-0.478541000
C	-2.879233000	0.966099000	0.091271000
H	-1.266242000	2.322687000	0.235742000
O	0.127917000	-1.913058000	0.030593000
Cl	5.206170000	-1.091558000	-0.174127000
Cl	4.460652000	2.021055000	-0.046930000
Cl	-4.746251000	-0.790507000	-0.974178000
Cl	-4.086483000	2.227514000	0.165890000
O	-2.801989000	-1.819682000	1.527138000
H	-3.653508000	-0.801152000	1.245600000

IM2-c:

C	-3.047211000	0.846596000	0.057999000
C	-1.718802000	1.235055000	-0.044236000
C	-0.735302000	0.245143000	-0.143201000
C	-1.126516000	-1.107173000	-0.130163000
C	-2.438719000	-1.520775000	-0.021718000
C	-3.406237000	-0.520948000	0.069206000
H	-1.468296000	2.287603000	-0.046108000
H	-2.713001000	-2.566533000	-0.012270000
C	1.043435000	-1.115102000	-0.291230000
C	0.696928000	0.224220000	-0.260093000
C	2.423980000	-1.585628000	-0.574456000
C	1.707911000	1.247963000	-0.308437000
C	3.451329000	-0.538176000	-0.077875000
H	2.654838000	-2.570529000	-0.149299000
C	3.004266000	0.886268000	-0.241887000

H	1.428617000	2.289828000	-0.396463000
O	-0.033834000	-1.935148000	-0.218914000
Cl	-5.074266000	-1.005821000	0.195605000
Cl	-4.268540000	2.089933000	0.177441000
Cl	3.817845000	-0.846424000	1.699736000
Cl	4.267392000	2.086080000	-0.292202000
O	2.278168000	-1.567087000	-1.940150000
H	4.391476000	-0.711192000	-0.596677000

TS2-c-1: :

C	-3.003899000	0.852091000	0.019670000
C	-1.667865000	1.218103000	-0.099653000
C	-0.706409000	0.212867000	-0.220751000
C	-1.122812000	-1.126466000	-0.205720000
C	-2.441807000	-1.519693000	-0.086689000
C	-3.389925000	-0.505061000	0.026126000
H	-1.400794000	2.266683000	-0.097486000
H	-2.733651000	-2.560792000	-0.080104000
C	1.053284000	-1.163719000	-0.427898000
C	0.733546000	0.163730000	-0.357268000
C	2.393579000	-1.803880000	-0.659688000
C	1.727940000	1.210293000	-0.413434000
C	3.501218000	-0.396676000	0.250591000
H	2.666332000	-2.585105000	0.067597000
C	3.020497000	0.921865000	-0.182361000
H	1.436201000	2.215750000	-0.691332000
O	-0.042329000	-1.966751000	-0.326966000
Cl	-5.067609000	-0.961973000	0.178039000
Cl	-4.198298000	2.120813000	0.165221000
Cl	3.362702000	-0.720200000	1.986671000
Cl	4.279634000	2.121629000	-0.432387000
O	2.863517000	-1.851326000	-1.824119000
H	4.479044000	-0.697216000	-0.105776000

P2-c-1:

C	-2.861633000	0.868106000	0.062833000
C	-1.497112000	1.111302000	-0.031363000
C	-0.635827000	0.029940000	-0.228182000
C	-1.171165000	-1.258853000	-0.304288000
C	-2.524514000	-1.534446000	-0.203464000
C	-3.372539000	-0.446737000	-0.021461000
H	-1.130201000	2.125796000	0.054080000

H	-2.911448000	-2.542120000	-0.264343000
C	1.012064000	-1.490726000	-0.528694000
C	0.809123000	-0.115465000	-0.346115000
C	2.143179000	-2.314797000	-0.926234000
C	1.705028000	0.978552000	-0.355483000
C	3.822333000	0.323903000	0.861102000
H	1.883460000	-3.384202000	-1.041631000
C	3.079802000	1.033132000	-0.029868000
H	1.273054000	1.927384000	-0.657813000
O	-0.185087000	-2.178147000	-0.485996000
Cl	-5.085200000	-0.751829000	0.103031000
Cl	-3.933165000	2.227934000	0.299582000
Cl	3.185652000	-0.835810000	1.971239000
Cl	3.969634000	2.352722000	-0.825984000
O	3.263382000	-1.898787000	-1.149693000
H	4.878683000	0.503836000	0.988770000

TS2-c-2 :

C	-3.077332000	0.802763000	0.055500000
C	-1.724661000	1.116972000	0.030022000
C	-0.793864000	0.074613000	-0.043774000
C	-1.263882000	-1.247303000	-0.084775000
C	-2.595626000	-1.593833000	-0.025991000
C	-3.512165000	-0.541568000	0.030053000
H	-1.418298000	2.153862000	0.076324000
H	-2.926118000	-2.623107000	-0.043896000
C	0.927715000	-1.391900000	-0.039163000
C	0.646028000	-0.021186000	-0.124871000
C	3.258258000	-1.576087000	-0.837527000
C	1.596440000	1.043558000	-0.234374000
C	3.723090000	-0.351449000	-0.020106000
H	3.311260000	-2.533580000	-0.292366000
C	2.940710000	0.910737000	-0.209945000
H	1.197740000	2.046185000	-0.337958000
O	-0.191906000	-2.127374000	-0.114929000
Cl	-5.207967000	-0.934825000	0.053724000
Cl	-4.232297000	2.111107000	0.138246000
Cl	3.842110000	-0.784117000	1.753367000
Cl	3.920442000	2.357343000	-0.353447000
O	3.048451000	-1.492346000	-2.023749000
H	4.755903000	-0.179141000	-0.325107000

P2-c-2:

C	3.039570000	0.786684000	-0.026747000
C	1.679610000	1.074808000	-0.092954000
C	0.775346000	0.014764000	-0.173537000
C	1.275891000	-1.293338000	-0.173891000
C	2.615606000	-1.613673000	-0.099660000
C	3.506463000	-0.543943000	-0.029445000
H	1.353314000	2.106286000	-0.075348000
H	2.966089000	-2.636369000	-0.098547000
C	-0.877210000	-1.444369000	-0.277856000
C	-0.681913000	-0.095607000	-0.257878000
C	-3.256427000	-0.958922000	1.589931000
C	-1.627694000	0.996536000	-0.328255000
C	-3.734358000	-0.271641000	0.294009000
H	-3.422348000	-2.052515000	1.617290000
C	-2.950628000	0.933434000	-0.118631000
H	-1.210655000	1.963101000	-0.586962000
O	0.223120000	-2.196172000	-0.244580000
Cl	5.213268000	-0.901346000	0.055033000
Cl	4.161473000	2.124385000	0.067684000
Cl	-3.851892000	-1.528414000	-1.043025000
Cl	-3.917619000	2.388652000	-0.336949000
O	-2.821700000	-0.343226000	2.521011000
H	-4.772223000	0.010588000	0.474980000

TS2-d:

C	3.208448000	0.791559000	0.077311000
C	1.890996000	1.204831000	0.257797000
C	0.872810000	0.257318000	0.192787000
C	1.198127000	-1.086430000	-0.058575000
C	2.497176000	-1.522389000	-0.236507000
C	3.507853000	-0.561742000	-0.168714000
H	1.681820000	2.249229000	0.448946000
H	2.728615000	-2.561563000	-0.425097000
C	-0.986238000	-1.097412000	0.309018000
C	-0.575170000	0.305349000	0.268494000
C	-2.404005000	-1.520543000	0.049732000
C	-1.510271000	1.288398000	0.172573000
C	-3.317995000	-0.342401000	-0.163597000
H	-2.551331000	-2.296209000	-0.705356000
C	-2.899098000	0.941509000	-0.019209000
H	-1.240591000	2.336435000	0.160684000
O	0.090298000	-1.893456000	-0.121606000

Cl	5.153591000	-1.089167000	-0.393763000
Cl	4.474736000	1.991682000	0.168635000
Cl	-4.958061000	-0.761173000	-0.521904000
Cl	-4.007073000	2.288430000	-0.150530000
O	-2.532466000	-2.048445000	1.394728000
H	-1.251271000	-1.447100000	1.507749000

IM2-d:

C	3.188228000	0.809333000	-0.045438000
C	1.869292000	1.238991000	0.056261000
C	0.860213000	0.291657000	0.222130000
C	1.189375000	-1.072965000	0.263055000
C	2.493841000	-1.523813000	0.157800000
C	3.495548000	-0.564650000	0.003827000
H	1.649542000	2.297895000	0.015109000
H	2.732639000	-2.577799000	0.189665000
C	-1.041732000	-1.047226000	0.575534000
C	-0.579497000	0.366672000	0.320203000
C	-2.239243000	-1.410336000	-0.377649000
C	-1.483849000	1.351091000	0.130199000
C	-3.278794000	-0.283558000	-0.163227000
H	-1.843079000	-1.295299000	-1.410632000
C	-2.886808000	0.999673000	0.036917000
H	-1.198084000	2.385291000	-0.013704000
O	0.105449000	-1.885280000	0.395041000
Cl	5.142404000	-1.116518000	-0.127764000
Cl	4.443912000	2.009361000	-0.234750000
Cl	-4.926374000	-0.756417000	-0.307677000
Cl	-4.026272000	2.322156000	0.129069000
O	-2.633041000	-2.659212000	-0.177153000
H	-1.412125000	-1.179250000	1.597886000

TS2-d-1: :

C	3.157618000	0.811784000	-0.097498000
C	1.839626000	1.236944000	0.023599000
C	0.853280000	0.294800000	0.314361000
C	1.208051000	-1.054755000	0.455543000
C	2.508821000	-1.506518000	0.323949000
C	3.487869000	-0.552189000	0.049593000
H	1.604297000	2.285860000	-0.100869000
H	2.761976000	-2.552231000	0.430051000
C	-1.000453000	-1.033288000	0.742815000

C	-0.584934000	0.345601000	0.469966000
C	-2.221891000	-1.400992000	-0.632866000
C	-1.500487000	1.330842000	0.227153000
C	-3.257235000	-0.297802000	-0.247522000
H	-1.595306000	-1.046463000	-1.479529000
C	-2.885701000	0.972823000	0.070404000
H	-1.208023000	2.362995000	0.080966000
O	0.131637000	-1.846304000	0.732557000
Cl	5.135148000	-1.092755000	-0.109628000
Cl	4.387943000	2.002517000	-0.440922000
Cl	-4.902248000	-0.772868000	-0.393764000
Cl	-4.046976000	2.272231000	0.243981000
O	-2.542623000	-2.606678000	-0.582110000
H	-1.658172000	-1.264944000	1.574481000

P2-d-1:

C	-3.184245000	0.749752000	0.225945000
C	-1.820470000	1.018631000	0.184090000
C	-0.952225000	0.007151000	-0.228998000
C	-1.481857000	-1.239551000	-0.574100000
C	-2.830134000	-1.540663000	-0.537697000
C	-3.686594000	-0.520126000	-0.131154000
H	-1.462427000	1.997935000	0.473868000
H	-3.210275000	-2.515823000	-0.808889000
C	0.685833000	-1.402889000	-0.835074000
C	0.491053000	-0.109931000	-0.392851000
C	2.981484000	-1.208127000	1.283872000
C	1.434495000	0.955553000	-0.243104000
C	3.550149000	-0.238847000	0.336392000
H	1.990071000	-0.923643000	1.674759000
C	2.818966000	0.863237000	-0.125485000
H	1.027909000	1.958467000	-0.312616000
O	-0.477164000	-2.096359000	-0.945449000
Cl	-5.396964000	-0.857301000	-0.074533000
Cl	-4.263476000	2.024402000	0.739734000
Cl	5.225748000	-0.434625000	-0.035244000
Cl	3.699860000	2.320073000	-0.595024000
O	3.544099000	-2.213346000	1.662914000
H	1.572661000	-1.937774000	-1.131730000

TS2-d-2 :

C	-3.139975000	0.822870000	-0.024556000
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C	-1.805639000	1.195091000	-0.116244000
C	-0.829417000	0.200829000	-0.205685000
C	-1.210225000	-1.150460000	-0.194176000
C	-2.536118000	-1.544780000	-0.088500000
C	-3.499984000	-0.542352000	-0.009388000
H	-1.545740000	2.245730000	-0.121596000
H	-2.815703000	-2.589028000	-0.074398000
C	1.051966000	-1.207211000	-0.412278000
C	0.611929000	0.222633000	-0.258389000
C	2.054538000	-1.706090000	0.687407000
C	1.473064000	1.265117000	-0.108536000
C	3.434129000	-0.176110000	-0.052373000
H	1.912160000	-1.218583000	1.670410000
C	2.890189000	1.055943000	-0.043280000
H	1.105598000	2.278927000	-0.009761000
O	-0.163940000	-1.999520000	-0.281389000
Cl	-5.170396000	-1.020741000	0.106230000
Cl	-4.353426000	2.075909000	0.074366000
Cl	5.013194000	-0.696816000	-0.248001000
Cl	3.891910000	2.492030000	0.216985000
O	2.590982000	-2.793918000	0.573848000
H	1.478810000	-1.438908000	-1.391219000

P2-d-2:

C	-3.075983000	0.826315000	0.170660000
C	-1.709460000	1.069555000	0.288476000
C	-0.811497000	0.040263000	0.018702000
C	-1.298650000	-1.212661000	-0.368794000
C	-2.649568000	-1.478940000	-0.501367000
C	-3.540919000	-0.440680000	-0.223023000
H	-1.370810000	2.052183000	0.590971000
H	-3.008705000	-2.451586000	-0.807815000
C	0.953324000	-1.497924000	-0.259925000
C	0.644556000	-0.030119000	-0.016475000
C	1.430224000	-2.184915000	1.027310000
C	1.520405000	0.994563000	0.071034000
C	3.711855000	-0.158343000	-0.114947000
H	0.606586000	-2.471354000	1.712166000
C	2.961853000	0.933027000	-0.078507000
H	1.120612000	1.990307000	0.225377000
O	-0.306347000	-2.113921000	-0.620196000
Cl	-5.247441000	-0.764317000	-0.375013000
Cl	-4.187858000	2.127070000	0.527117000

Cl	5.334157000	-0.515454000	-0.224755000
Cl	3.744431000	2.533175000	-0.284945000
O	2.583234000	-2.396566000	1.287081000
H	1.684470000	-1.664549000	-1.055477000

RC3:

C	3.124071000	0.709197000	-0.160429000
C	1.787831000	1.087055000	-0.218505000
C	0.807212000	0.099534000	-0.128620000
C	1.196953000	-1.240871000	0.026243000
C	2.517351000	-1.643479000	0.088024000
C	3.486042000	-0.645861000	-0.009957000
H	1.530401000	2.132539000	-0.323001000
H	2.795738000	-2.681264000	0.207948000
C	-0.992867000	-1.270394000	0.003763000
C	-0.636521000	0.077363000	-0.147040000
C	-2.302529000	-1.709277000	0.037324000
C	-1.646006000	1.040552000	-0.264538000
C	-3.303471000	-0.743037000	-0.091781000
H	-2.552343000	-2.754321000	0.159099000
C	-2.980473000	0.614935000	-0.251903000
H	-1.419518000	2.081123000	-0.443998000
O	0.111208000	-2.079201000	0.109577000
Cl	5.162055000	-1.123276000	0.062188000
Cl	4.344985000	1.954717000	-0.277046000
Cl	-4.964320000	-1.276282000	-0.057334000
Cl	-4.229834000	1.819389000	-0.447492000
O	-1.331199000	1.812232000	2.019887000
H	-2.258975000	1.736055000	2.303388000

TS3:

C	3.257670000	0.773399000	-0.002627000
C	1.930786000	1.185670000	-0.007108000
C	0.924916000	0.217896000	-0.041194000
C	1.283489000	-1.142009000	-0.071139000
C	2.594827000	-1.577406000	-0.068244000
C	3.587356000	-0.598523000	-0.032842000
H	1.700576000	2.242732000	0.016111000
H	2.849015000	-2.628058000	-0.091578000
C	-0.909072000	-1.118827000	-0.097098000

C	-0.517536000	0.235592000	-0.062981000
C	-2.218265000	-1.525878000	-0.141338000
C	-1.499539000	1.234901000	-0.063904000
C	-3.218011000	-0.519552000	-0.080534000
H	-2.504970000	-2.566606000	-0.187025000
C	-2.830750000	0.864730000	-0.103899000
H	-1.237348000	2.284582000	-0.049792000
O	0.182638000	-1.958269000	-0.101579000
Cl	5.250237000	-1.119444000	-0.025898000
Cl	4.506929000	1.994407000	0.041235000
Cl	-4.821663000	-0.976569000	-0.593373000
Cl	-4.045736000	2.104672000	-0.130207000
O	-3.613403000	-0.690007000	1.929838000
H	-2.802417000	-0.378511000	2.363795000

P3:

C	-3.164944000	0.780286000	0.179755000
C	-1.860100000	1.258177000	0.215824000
C	-0.816048000	0.381615000	-0.081244000
C	-1.118154000	-0.952112000	-0.408412000
C	-2.405761000	-1.452699000	-0.450946000
C	-3.436604000	-0.565276000	-0.150846000
H	-1.678415000	2.293236000	0.473641000
H	-2.611233000	-2.483901000	-0.702612000
C	1.059472000	-0.804318000	-0.514069000
C	0.624939000	0.471173000	-0.156027000
C	2.402349000	-1.134428000	-0.697059000
C	1.574125000	1.496920000	0.002366000
C	3.351307000	-0.084473000	-0.518312000
H	2.692454000	-2.057099000	-1.177316000
C	2.918167000	1.215776000	-0.183374000
H	1.275377000	2.500668000	0.276581000
O	0.018326000	-1.672309000	-0.678256000
Cl	-5.073203000	-1.163986000	-0.194946000
Cl	-4.462987000	1.887530000	0.554403000
Cl	3.270902000	-2.426513000	1.325516000
Cl	4.104981000	2.477286000	0.022568000
O	4.659824000	-0.307638000	-0.676115000
H	4.849358000	-1.240559000	-0.489449000

RC4:

C	3.123973000	0.709110000	-0.160345000
C	1.787736000	1.086990000	-0.218443000
C	0.807103000	0.099440000	-0.129021000
C	1.196817000	-1.240990000	0.025688000
C	2.517205000	-1.643629000	0.087598000
C	3.485894000	-0.645971000	-0.010067000
H	1.530318000	2.132504000	-0.322683000
H	2.795595000	-2.681422000	0.207426000
C	-0.993021000	-1.270498000	0.003320000
C	-0.636661000	0.077308000	-0.147433000
C	-2.302691000	-1.709306000	0.037382000
C	-1.646116000	1.040527000	-0.264917000
C	-3.303600000	-0.742965000	-0.091507000
H	-2.552558000	-2.754320000	0.159361000
C	-2.980615000	0.614965000	-0.252088000
H	-1.419623000	2.081128000	-0.444220000
O	0.111053000	-2.079325000	0.108955000
Cl	5.161926000	-1.123375000	0.062205000
Cl	4.344931000	1.954625000	-0.276555000
Cl	-4.964534000	-1.276048000	-0.056091000
Cl	-4.229974000	1.819342000	-0.447906000
O	-1.329057000	1.813467000	2.019303000
H	-2.255766000	1.731831000	2.304960000

TS4:

C	3.226007000	0.765840000	-0.044428000
C	1.888988000	1.153722000	-0.065760000
C	0.903611000	0.169309000	-0.056076000
C	1.289792000	-1.178768000	-0.022301000
C	2.606220000	-1.593219000	0.000968000
C	3.582264000	-0.596169000	-0.011040000
H	1.640824000	2.206691000	-0.088386000
H	2.878166000	-2.639336000	0.027495000
C	-0.902795000	-1.208746000	-0.047375000
C	-0.547451000	0.153055000	-0.067841000
C	-2.216198000	-1.665804000	-0.083447000
C	-1.548409000	1.107769000	-0.114623000
C	-3.214689000	-0.714877000	-0.126168000
H	-2.447819000	-2.721976000	-0.089221000
C	-2.903521000	0.689744000	-0.040401000
H	-1.334126000	2.166668000	-0.172300000
O	0.196095000	-2.018417000	-0.016203000
Cl	5.255658000	-1.087590000	0.016705000

Cl	4.449904000	2.013644000	-0.058119000
Cl	-4.865818000	-1.232113000	-0.178667000
Cl	-4.108829000	1.864841000	-0.556013000
O	-3.078056000	0.797782000	1.957232000
H	-3.089837000	1.762605000	2.058730000

P4:

C	-3.030564000	0.580664000	-0.274322000
C	-1.703938000	0.962801000	-0.428997000
C	-0.704754000	0.011433000	-0.218944000
C	-1.069881000	-1.293838000	0.156756000
C	-2.381569000	-1.698342000	0.320957000
C	-3.367486000	-0.740366000	0.097049000
H	-1.466589000	1.983851000	-0.695962000
H	-2.638854000	-2.707451000	0.611505000
C	1.116204000	-1.292083000	0.083435000
C	0.735830000	0.002005000	-0.264182000
C	2.440967000	-1.722857000	0.122628000
C	1.734677000	0.947322000	-0.575853000
C	3.428576000	-0.793459000	-0.183866000
H	2.697452000	-2.738093000	0.394063000
C	3.100665000	0.533809000	-0.522319000
H	1.491956000	1.850325000	-1.116741000
O	0.032433000	-2.090324000	0.339860000
Cl	-5.032596000	-1.217694000	0.292080000
Cl	-4.274472000	1.776337000	-0.543001000
Cl	5.102383000	-1.270008000	-0.130741000
Cl	1.932222000	2.587654000	1.275322000
O	4.088222000	1.395132000	-0.799270000
H	3.790300000	2.293462000	-0.583848000

RC5:

C	3.124082000	0.709258000	-0.160181000
C	1.787847000	1.087147000	-0.218246000
C	0.807209000	0.099591000	-0.128953000
C	1.196928000	-1.240869000	0.025550000
C	2.517312000	-1.643524000	0.087395000
C	3.485996000	-0.645845000	-0.010115000
H	1.530440000	2.132677000	-0.322363000

H	2.795705000	-2.681336000	0.207040000
C	-0.992903000	-1.270365000	0.003121000
C	-0.636539000	0.077444000	-0.147444000
C	-2.302590000	-1.709180000	0.037128000
C	-1.646002000	1.040710000	-0.264629000
C	-3.303486000	-0.742826000	-0.091645000
H	-2.552429000	-2.754218000	0.158964000
C	-2.980511000	0.615138000	-0.252047000
H	-1.419500000	2.081329000	-0.443784000
O	0.111154000	-2.079217000	0.108661000
Cl	5.162036000	-1.123262000	0.062077000
Cl	4.345037000	1.954791000	-0.276177000
Cl	-4.964439000	-1.275893000	-0.056323000
Cl	-4.229863000	1.819474000	-0.447914000
O	-1.330897000	1.811267000	2.019704000
H	-2.257417000	1.728212000	2.305354000

TS5:

C	3.128732000	0.714441000	-0.132780000
C	1.792703000	1.093437000	-0.169078000
C	0.812759000	0.102555000	-0.095340000
C	1.204544000	-1.241948000	0.025661000
C	2.525550000	-1.645137000	0.065945000
C	3.492548000	-0.644643000	-0.018420000
H	1.532739000	2.140841000	-0.242521000
H	2.805790000	-2.685164000	0.159180000
C	-0.984856000	-1.267134000	0.023454000
C	-0.627798000	0.079855000	-0.102011000
C	-2.296020000	-1.708055000	0.047909000
C	-1.640492000	1.060698000	-0.170888000
C	-3.300250000	-0.739122000	-0.072516000
H	-2.545354000	-2.755341000	0.149430000
C	-2.984236000	0.618173000	-0.216827000
H	-1.417984000	2.075710000	-0.461554000
O	0.119284000	-2.080379000	0.102613000
Cl	5.168903000	-1.122248000	0.025910000
Cl	4.348932000	1.961758000	-0.229127000
Cl	-4.958202000	-1.282801000	-0.065156000
Cl	-4.224503000	1.813772000	-0.439838000
O	-1.473534000	1.853690000	1.776806000
H	-1.977503000	1.200590000	2.289038000

IM5:

C	3.137245000	0.705907000	-0.077775000
C	1.803309000	1.090405000	-0.090544000
C	0.817682000	0.096406000	-0.045477000
C	1.214487000	-1.255998000	0.025759000
C	2.534584000	-1.660035000	0.042340000
C	3.502546000	-0.657019000	-0.012599000
H	1.542772000	2.139511000	-0.126391000
H	2.815270000	-2.702878000	0.095142000
C	-0.974492000	-1.261122000	0.029782000
C	-0.611816000	0.070717000	-0.045531000
C	-2.289110000	-1.727710000	0.054497000
C	-1.630633000	1.164631000	-0.083737000
C	-3.313469000	-0.748968000	-0.026001000
H	-2.526905000	-2.778927000	0.124875000
C	-3.040508000	0.594205000	-0.114631000
H	-1.494616000	1.784267000	-0.978118000
O	0.126743000	-2.086052000	0.074998000
Cl	5.179536000	-1.136874000	0.004910000
Cl	4.360262000	1.954322000	-0.138746000
Cl	-4.960061000	-1.342743000	-0.023893000
Cl	-4.292983000	1.779788000	-0.277254000
O	-1.449794000	2.103105000	0.989599000
H	-1.525878000	1.626718000	1.825920000

TS5-a:

C	3.282324000	0.715888000	-0.020156000
C	1.982776000	1.190881000	0.080525000
C	0.927453000	0.271799000	0.084622000
C	1.221844000	-1.107306000	-0.015754000
C	2.510143000	-1.598916000	-0.129498000
C	3.545890000	-0.668237000	-0.126395000
H	1.800748000	2.254610000	0.154703000
H	2.713307000	-2.657757000	-0.216375000
C	-0.965867000	-0.946183000	0.119285000
C	-0.497416000	0.333443000	0.140842000
C	-2.298863000	-1.466033000	0.165146000
C	-2.451854000	1.502162000	0.913276000
C	-3.381557000	-0.648089000	0.094364000
H	-2.426251000	-2.541384000	0.200517000
C	-3.232749000	0.788854000	0.034063000
H	-2.226296000	2.542281000	0.719508000
O	0.084651000	-1.859355000	0.004600000

Cl	5.182425000	-1.262131000	-0.261151000
Cl	4.593043000	1.875757000	-0.017008000
Cl	-4.993692000	-1.330613000	-0.051057000
Cl	-3.864559000	1.632732000	-1.364583000
O	-2.190968000	1.157311000	2.188180000
H	-2.456398000	0.241345000	2.352050000

IM5-a:

C	3.424299000	0.749799000	-0.055895000
C	2.134263000	1.259421000	-0.023976000
C	1.061356000	0.362527000	-0.006507000
C	1.322193000	-1.025258000	-0.024390000
C	2.601888000	-1.550097000	-0.060896000
C	3.658526000	-0.643950000	-0.075135000
H	1.973993000	2.328951000	-0.012267000
H	2.781330000	-2.616646000	-0.077971000
C	-0.881483000	-0.819920000	0.027103000
C	-0.358024000	0.431456000	0.012682000
C	-2.204028000	-1.383140000	0.042216000
C	-3.102305000	1.538091000	1.122835000
C	-3.347987000	-0.670057000	0.012864000
H	-2.252769000	-2.465976000	0.046585000
C	-3.439896000	0.785786000	0.059921000
H	-3.195552000	2.616063000	1.102186000
O	0.166196000	-1.748613000	-0.004119000
Cl	5.283604000	-1.279676000	-0.118520000
Cl	4.760463000	1.877991000	-0.074062000
Cl	-4.881615000	-1.538036000	-0.093554000
Cl	-4.109310000	1.591206000	-1.359318000
O	-2.646385000	1.089885000	2.307678000
H	-2.581711000	0.124241000	2.300767000

TS5-a-1: :

C	3.525009000	0.754399000	-0.147195000
C	2.243494000	1.289654000	-0.131240000
C	1.156871000	0.416526000	-0.036611000
C	1.393203000	-0.970163000	0.051231000
C	2.660438000	-1.520927000	0.061978000
C	3.733948000	-0.638719000	-0.046616000
H	2.101704000	2.359641000	-0.200977000
H	2.820866000	-2.586886000	0.150590000
C	-0.810969000	-0.731886000	0.093215000

C	-0.260085000	0.522714000	0.080149000
C	-2.123277000	-1.290728000	0.112400000
C	-3.154476000	1.714505000	0.876533000
C	-3.325129000	-0.663023000	0.040468000
H	-2.133572000	-2.372926000	0.161688000
C	-3.651491000	0.751716000	0.064250000
H	-3.596865000	2.704448000	0.841153000
O	0.220341000	-1.668465000	0.151531000
Cl	5.344931000	-1.306642000	-0.050324000
Cl	4.878551000	1.850988000	-0.285994000
Cl	-4.722690000	-1.740295000	-0.045989000
Cl	-4.935815000	1.288191000	-1.031516000
O	-2.181074000	1.603883000	1.786184000
H	-1.436080000	1.039859000	1.469450000

P5-a-1:

C	3.503452000	0.742336000	-0.329886000
C	2.220011000	1.225384000	-0.522458000
C	1.134226000	0.372957000	-0.264380000
C	1.387820000	-0.942112000	0.179217000
C	2.659300000	-1.445340000	0.376848000
C	3.724082000	-0.583882000	0.116942000
H	2.071448000	2.242093000	-0.861148000
H	2.830936000	-2.457077000	0.717067000
C	-0.806617000	-0.732747000	0.057811000
C	-0.276428000	0.490465000	-0.338407000
C	-2.091869000	-1.276626000	0.121249000
C	-3.029954000	1.534201000	1.257918000
C	-3.330061000	-0.623941000	-0.068025000
H	-2.127704000	-2.355550000	0.220578000
C	-3.689116000	0.670297000	0.256826000
H	-3.549887000	2.499871000	1.396440000
O	0.224898000	-1.614919000	0.369073000
Cl	5.340806000	-1.187368000	0.355964000
Cl	4.851690000	1.807872000	-0.650725000
Cl	-4.553464000	-1.682919000	-0.781121000
Cl	-5.180608000	1.361730000	-0.342768000
O	-2.049806000	1.246211000	1.910693000
H	-0.847815000	1.346032000	-0.655959000

TS5-a-2: :

C	3.322514000	0.796275000	-0.105296000
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C	1.996333000	1.203628000	-0.052833000
C	0.990538000	0.231696000	-0.033295000
C	1.365004000	-1.133985000	-0.072230000
C	2.679777000	-1.558148000	-0.126828000
C	3.664207000	-0.572785000	-0.142192000
H	1.757397000	2.258312000	-0.028733000
H	2.941903000	-2.607153000	-0.157225000
C	-0.810267000	-1.089574000	0.006570000
C	-0.440633000	0.210336000	0.012053000
C	-2.184046000	-1.504081000	0.032895000
C	-2.634158000	1.701836000	1.219009000
C	-3.046709000	-0.471003000	0.061944000
H	-2.492471000	-2.540736000	0.015937000
C	-2.541685000	0.932228000	0.076737000
H	-2.509673000	2.775678000	1.203739000
O	0.267442000	-1.953833000	-0.050130000
Cl	5.334218000	-1.082196000	-0.209100000
Cl	4.567256000	2.027538000	-0.127257000
Cl	-4.784585000	-0.693446000	0.064315000
Cl	-2.685695000	1.816141000	-1.459085000
O	-2.745143000	1.198916000	2.454992000
H	-2.845768000	0.235628000	2.422173000

P5-a-2:

C	2.865033000	0.757856000	0.119569000
C	1.480491000	0.928150000	0.188167000
C	0.651829000	-0.186423000	0.086549000
C	1.251605000	-1.451714000	-0.090849000
C	2.607646000	-1.649840000	-0.163617000
C	3.425322000	-0.515947000	-0.054005000
H	1.078348000	1.924076000	0.316265000
H	3.036492000	-2.632882000	-0.300362000
C	-0.891962000	-1.869653000	-0.072671000
C	-0.770668000	-0.440339000	0.107213000
C	-2.222120000	-2.290409000	-0.079415000
C	-2.431547000	1.490876000	0.421625000
C	-2.929226000	-1.099266000	0.100719000
H	-2.629118000	-3.280996000	-0.189045000
C	-2.042514000	0.071018000	0.229690000
H	-1.563823000	2.108565000	0.629964000
O	0.304507000	-2.478232000	-0.186727000
Cl	5.150535000	-0.743042000	-0.142467000
Cl	3.877089000	2.175408000	0.252168000

Cl	-4.652464000	-1.009370000	0.166554000
Cl	-3.040608000	2.168457000	-1.232763000
O	-3.358341000	1.748375000	1.408384000
H	-4.141942000	1.199533000	1.272693000

TS5-b:

C	-3.289923000	0.625705000	-0.139476000
C	-2.001967000	1.152141000	-0.041236000
C	-0.924472000	0.287920000	0.154696000
C	-1.181607000	-1.085439000	0.277155000
C	-2.446810000	-1.632555000	0.194803000
C	-3.510858000	-0.756342000	-0.025581000
H	-1.887977000	2.226120000	-0.106870000
H	-2.612847000	-2.696226000	0.295158000
C	1.026409000	-0.903726000	0.478475000
C	0.508482000	0.441520000	0.398406000
C	2.272944000	-1.440551000	0.349607000
C	1.221721000	1.590409000	0.638121000
C	3.479186000	-0.730294000	0.040004000
H	2.332033000	-2.521398000	0.369679000
C	3.635204000	0.598081000	0.050306000
H	2.113496000	1.604560000	1.242425000
O	-0.042535000	-1.798091000	0.506493000
Cl	-5.115586000	-1.427258000	-0.152229000
Cl	-4.616713000	1.733646000	-0.400993000
Cl	4.803153000	-1.783125000	-0.558645000
Cl	4.998351000	1.563217000	-0.206723000
O	0.795834000	2.827449000	0.333627000
H	0.122560000	2.800709000	-0.356997000

IM5-b:

C	3.397687000	0.596461000	0.088807000
C	2.124195000	1.171703000	0.088823000
C	1.001647000	0.353955000	-0.027498000
C	1.197077000	-1.024119000	-0.171035000
C	2.441186000	-1.621625000	-0.182842000
C	3.554694000	-0.789630000	-0.043326000
H	2.069984000	2.250261000	0.163518000
H	2.555830000	-2.690613000	-0.296897000
C	-1.028924000	-0.772299000	-0.227889000
C	-0.447353000	0.568124000	-0.116970000
C	-2.266271000	-1.324934000	-0.187035000

C	-1.125155000	1.743880000	-0.148624000
C	-3.557940000	-0.704573000	-0.032214000
H	-2.279930000	-2.406672000	-0.239330000
C	-3.902931000	0.563302000	-0.211592000
H	-2.179624000	1.790766000	-0.388207000
O	0.019873000	-1.693180000	-0.312531000
Cl	5.136370000	-1.525250000	-0.044243000
Cl	4.780301000	1.654534000	0.249399000
Cl	-4.832922000	-1.846774000	0.515804000
Cl	-5.324386000	1.449217000	-0.181823000
O	-0.604367000	2.962541000	0.081057000
H	0.273061000	2.900547000	0.475779000

TS5-b-1: :

C	2.812096000	0.645582000	-0.234195000
C	1.480408000	1.016161000	-0.007685000
C	0.548636000	0.033548000	0.294104000
C	0.953755000	-1.309406000	0.341882000
C	2.259319000	-1.700091000	0.135458000
C	3.195074000	-0.698691000	-0.153618000
H	1.199108000	2.056432000	-0.120538000
H	2.557119000	-2.738477000	0.183909000
C	-1.240224000	-1.395938000	0.545733000
C	-0.876443000	0.039786000	0.707856000
C	-2.423075000	-1.791302000	0.063029000
C	-1.279936000	0.766380000	1.828697000
C	-3.237689000	-0.665710000	-0.386104000
H	-2.694869000	-2.820447000	-0.124300000
C	-2.608603000	0.503839000	-0.579359000
H	-2.207238000	0.556376000	2.344733000
O	-0.086522000	-2.172238000	0.606872000
Cl	4.847786000	-1.182435000	-0.426456000
Cl	3.963441000	1.897881000	-0.629270000
Cl	-4.949904000	-0.943364000	-0.705451000
Cl	-3.315001000	2.050002000	-0.764038000
O	-0.647243000	1.843176000	2.317477000
H	0.228611000	1.938249000	1.915271000

P5-b-1:

C	2.581265000	0.656688000	-0.295351000
C	1.221114000	0.951724000	-0.118245000
C	0.343107000	-0.076784000	0.174082000

C	0.827770000	-1.388728000	0.284174000
C	2.159749000	-1.705625000	0.131917000
C	3.042115000	-0.657122000	-0.159883000
H	0.879083000	1.972087000	-0.241090000
H	2.517487000	-2.722252000	0.218966000
C	-1.340663000	-1.608012000	0.398734000
C	-1.115966000	-0.123175000	0.585472000
C	-2.518725000	-1.889414000	-0.169567000
C	-1.258639000	0.246302000	2.064841000
C	-3.142347000	-0.585331000	-0.464052000
H	-2.905082000	-2.843460000	-0.493296000
C	-2.307750000	0.440253000	-0.172250000
H	-2.198987000	0.019173000	2.552650000
O	-0.171983000	-2.320372000	0.522983000
Cl	4.729527000	-1.047517000	-0.366167000
Cl	3.667171000	1.966171000	-0.689679000
Cl	-4.734039000	-0.455864000	-1.126513000
Cl	-2.640478000	2.127909000	-0.303997000
O	-0.678782000	1.378236000	2.543629000
H	0.190359000	1.505012000	2.138701000

TS5-c:

C	3.127827000	0.725589000	-0.098100000
C	1.795108000	1.115285000	0.040122000
C	0.825050000	0.133348000	0.179909000
C	1.203164000	-1.214929000	0.201517000
C	2.513443000	-1.630007000	0.083184000
C	3.482395000	-0.634882000	-0.071699000
H	1.540758000	2.167102000	0.043672000
H	2.787113000	-2.675877000	0.099141000
C	-1.001446000	-1.264565000	0.305865000
C	-0.629826000	0.138738000	0.443671000
C	-2.261654000	-1.693351000	0.085850000
C	-1.669334000	1.207439000	0.187840000
C	-3.293138000	-0.694027000	-0.100499000
H	-2.503961000	-2.741657000	-0.017530000
C	-3.028262000	0.635379000	-0.130398000
H	-1.397295000	1.994884000	-0.520677000
O	0.119657000	-2.060365000	0.337768000
Cl	5.144135000	-1.133524000	-0.238604000
Cl	4.338183000	1.968201000	-0.295137000
Cl	-4.903931000	-1.317220000	-0.367767000
Cl	-4.239847000	1.829348000	-0.459261000

O	-1.595112000	1.677547000	1.552263000
H	-0.758117000	0.478307000	1.644655000

IM5-c:

C	3.120425000	0.689174000	0.136118000
C	1.785714000	1.063077000	0.314644000
C	0.808930000	0.081547000	0.273642000
C	1.175221000	-1.245381000	0.057662000
C	2.482479000	-1.652184000	-0.111922000
C	3.463199000	-0.656711000	-0.070477000
H	1.527430000	2.102322000	0.468281000
H	2.746096000	-2.687765000	-0.275778000
C	-1.034981000	-1.322171000	0.189850000
C	-0.672172000	0.104002000	0.482915000
C	-2.298020000	-1.735453000	-0.006438000
C	-1.580188000	1.049265000	-0.437889000
C	-3.331163000	-0.716905000	-0.011462000
H	-2.548634000	-2.767066000	-0.211833000
C	-3.031763000	0.598765000	-0.165119000
H	-1.344265000	0.749600000	-1.483075000
O	0.081417000	-2.095698000	0.021884000
Cl	5.124283000	-1.139973000	-0.289590000
Cl	4.342716000	1.935323000	0.175603000
Cl	-4.975445000	-1.287809000	0.136691000
Cl	-4.218615000	1.845343000	-0.164085000
O	-1.255790000	2.305521000	-0.210421000
H	-0.951676000	0.383146000	1.505043000

TS5-c-1: :

C	-3.128560000	0.682504000	-0.212372000
C	-1.801134000	1.050026000	-0.430149000
C	-0.816096000	0.075273000	-0.330371000
C	-1.177098000	-1.236790000	-0.015055000
C	-2.479924000	-1.636561000	0.197878000
C	-3.463661000	-0.649309000	0.096043000
H	-1.550072000	2.078133000	-0.653933000
H	-2.738466000	-2.659428000	0.433796000
C	1.022677000	-1.299998000	-0.217326000
C	0.642581000	0.087264000	-0.514897000
C	2.297779000	-1.721879000	-0.032108000
C	1.620656000	1.061647000	0.650974000
C	3.328412000	-0.714781000	-0.019561000

H	2.538308000	-2.756411000	0.172097000
C	3.040292000	0.595964000	0.217564000
H	1.353197000	0.543585000	1.597493000
O	-0.075661000	-2.070667000	0.054237000
Cl	-5.119936000	-1.119608000	0.364940000
Cl	-4.360460000	1.913390000	-0.329909000
Cl	4.964886000	-1.279961000	-0.267672000
Cl	4.231655000	1.833495000	0.167119000
O	1.283715000	2.271677000	0.526819000
H	1.042584000	0.521510000	-1.427762000

P5-c-1:

C	-3.488743000	0.730293000	-0.345407000
C	-2.193150000	1.168245000	-0.568756000
C	-1.130133000	0.299446000	-0.276101000
C	-1.417322000	-0.984485000	0.230027000
C	-2.699178000	-1.443237000	0.459931000
C	-3.742736000	-0.565562000	0.165780000
H	-2.018990000	2.162750000	-0.957429000
H	-2.895866000	-2.433349000	0.847084000
C	0.783640000	-0.847642000	0.083173000
C	0.284805000	0.373150000	-0.369115000
C	2.059723000	-1.424752000	0.160404000
C	2.820490000	1.308889000	1.265879000
C	3.295619000	-0.770154000	-0.036984000
H	2.080742000	-2.501192000	0.284745000
C	3.595200000	0.544280000	0.269801000
H	2.092406000	0.701674000	1.829508000
O	-0.267918000	-1.680263000	0.445762000
Cl	-5.372839000	-1.112150000	0.443962000
Cl	-4.808258000	1.816397000	-0.708786000
Cl	4.544230000	-1.798295000	-0.735110000
Cl	4.999489000	1.335759000	-0.358580000
O	2.979563000	2.485031000	1.505042000
H	0.874675000	1.192062000	-0.747369000

TS5-c-2 :

C	-3.179592000	0.674277000	-0.096299000
C	-1.855176000	1.104739000	-0.216100000
C	-0.846443000	0.155906000	-0.225750000
C	-1.169660000	-1.191047000	-0.107727000
C	-2.464595000	-1.654397000	0.007889000

C	-3.479194000	-0.693396000	0.011478000
H	-1.633544000	2.161223000	-0.293979000
H	-2.693364000	-2.707225000	0.097994000
C	1.047468000	-1.180914000	-0.203090000
C	0.651352000	0.256711000	-0.368742000
C	2.302615000	-1.654974000	-0.053529000
C	1.315190000	1.186602000	0.719531000
C	3.408309000	-0.734819000	-0.031176000
H	2.485504000	-2.712607000	0.077805000
C	3.253198000	0.602904000	-0.011950000
H	1.463721000	0.688941000	1.696477000
O	-0.046695000	-1.998170000	-0.120419000
Cl	-5.126810000	-1.246642000	0.160660000
Cl	-4.444872000	1.877584000	-0.086056000
Cl	5.013499000	-1.455947000	0.147184000
Cl	4.342323000	1.852867000	-0.268257000
O	1.196947000	2.398651000	0.621270000
H	0.944459000	0.662611000	-1.342351000

P5-c-2:

C	-3.295277000	0.673350000	-0.067667000
C	-1.986086000	1.164359000	-0.097392000
C	-0.937943000	0.261290000	-0.129999000
C	-1.197140000	-1.103792000	-0.123058000
C	-2.476745000	-1.622770000	-0.095477000
C	-3.534202000	-0.708489000	-0.067197000
H	-1.812037000	2.232787000	-0.092382000
H	-2.662317000	-2.687856000	-0.093911000
C	1.036092000	-0.993051000	-0.155143000
C	0.566068000	0.448836000	-0.173868000
C	2.275071000	-1.500453000	-0.108528000
C	1.046901000	1.278983000	1.031421000
C	3.498001000	-0.710700000	-0.122166000
H	2.386710000	-2.576227000	-0.056337000
C	3.632365000	0.539854000	-0.526655000
H	1.320771000	0.694543000	1.932280000
O	-0.049583000	-1.857016000	-0.157130000
Cl	-5.159357000	-1.342304000	-0.030261000
Cl	-4.611922000	1.820918000	-0.030473000
Cl	4.937661000	-1.576382000	0.492752000
Cl	4.834023000	1.686680000	-0.649681000
O	1.063865000	2.479903000	1.020055000
H	0.883086000	0.977642000	-1.078403000

TS5-d:

C	3.176705000	0.721762000	-0.018023000
C	1.850858000	1.126645000	0.052431000
C	0.848724000	0.149746000	0.045193000
C	1.222633000	-1.207921000	-0.025266000
C	2.535211000	-1.634540000	-0.091569000
C	3.518515000	-0.647499000	-0.089477000
H	1.615018000	2.180551000	0.116717000
H	2.796791000	-2.682418000	-0.143373000
C	-0.957902000	-1.172757000	0.067165000
C	-0.582817000	0.141050000	0.110848000
C	-2.298531000	-1.650556000	0.061351000
C	-1.610937000	1.204476000	0.238343000
C	-3.308390000	-0.740568000	0.043888000
H	-2.501305000	-2.713357000	0.071983000
C	-3.053634000	0.701832000	0.090738000
H	-1.396826000	2.080190000	-0.377581000
O	0.119614000	-2.019008000	-0.012725000
Cl	5.186349000	-1.151859000	-0.175672000
Cl	4.419748000	1.951292000	-0.011749000
Cl	-4.964906000	-1.282965000	0.077000000
Cl	-4.119137000	1.748090000	-0.868335000
O	-1.906219000	1.591448000	1.606392000
H	-3.138367000	1.107996000	1.308038000

IM5-d:

C	-3.100448000	0.662279000	-0.076247000
C	-1.796540000	1.112746000	-0.246737000
C	-0.754728000	0.184696000	-0.185294000
C	-1.062978000	-1.167813000	0.043666000
C	-2.346791000	-1.641576000	0.219556000
C	-3.375683000	-0.702071000	0.156302000
H	-1.610336000	2.161742000	-0.433565000
H	-2.555581000	-2.687379000	0.397806000
C	1.112550000	-1.070190000	-0.140704000
C	0.676944000	0.229674000	-0.279525000
C	2.474402000	-1.501918000	-0.164735000
C	1.677941000	1.285338000	-0.649596000
C	3.422861000	-0.544510000	-0.191771000
H	2.715267000	-2.556473000	-0.162478000
C	3.098649000	0.921364000	-0.142998000
H	1.411294000	2.280976000	-0.270046000

O	0.082408000	-1.934001000	0.069818000
Cl	-5.012233000	-1.264584000	0.372833000
Cl	-4.396513000	1.831650000	-0.157817000
Cl	5.109414000	-0.964376000	-0.237290000
Cl	3.289174000	1.503835000	1.591688000
O	1.571441000	1.169888000	-2.013296000
H	3.824174000	1.494996000	-0.715440000

TS5-d-1: :

C	-3.264377000	0.667489000	-0.078387000
C	-1.981182000	1.177714000	-0.220005000
C	-0.901138000	0.291201000	-0.183422000
C	-1.148379000	-1.087915000	-0.001931000
C	-2.417473000	-1.610904000	0.159060000
C	-3.482971000	-0.714908000	0.113559000
H	-1.833993000	2.239528000	-0.363264000
H	-2.583895000	-2.668494000	0.313168000
C	1.039378000	-0.890028000	-0.181875000
C	0.518368000	0.362224000	-0.233923000
C	2.380391000	-1.385556000	-0.265311000
C	2.333412000	1.693148000	-0.743915000
C	3.456078000	-0.582044000	-0.210876000
H	2.505876000	-2.456117000	-0.367584000
C	3.429310000	0.900259000	0.002886000
H	1.841386000	2.473041000	-0.135834000
O	0.015810000	-1.808275000	0.008559000
Cl	-5.096473000	-1.350420000	0.302947000
Cl	-4.609271000	1.782314000	-0.137603000
Cl	5.055731000	-1.281178000	-0.336635000
Cl	3.352006000	1.292942000	1.789618000
O	2.233566000	1.635256000	-1.953571000
H	4.373245000	1.329924000	-0.333116000

P5-d-1:

C	3.332179000	0.687270000	-0.040346000
C	2.056438000	1.230851000	-0.085618000
C	0.960975000	0.362011000	-0.104875000
C	1.184003000	-1.031955000	-0.078435000
C	2.448929000	-1.590044000	-0.028146000
C	3.528992000	-0.712123000	-0.010574000
H	1.924855000	2.304146000	-0.106434000
H	2.599522000	-2.660844000	-0.002819000

C	-1.014448000	-0.772971000	-0.151651000
C	-0.455432000	0.463120000	-0.135547000
C	-2.345084000	-1.305958000	-0.217407000
C	-2.921774000	1.330677000	1.490102000
C	-3.485333000	-0.606775000	-0.095418000
H	-2.404314000	-2.373771000	-0.390435000
C	-3.613192000	0.856124000	0.194411000
H	-2.545724000	2.370361000	1.453977000
O	0.009725000	-1.724845000	-0.105029000
Cl	5.135914000	-1.390327000	0.050235000
Cl	4.697561000	1.779363000	-0.019109000
Cl	-5.015140000	-1.449136000	-0.277074000
Cl	-3.055937000	1.904271000	-1.204806000
O	-2.875455000	0.654192000	2.477392000
H	-4.666761000	1.113050000	0.310635000

TS5-d-2 :

C	-3.121946000	0.639137000	-0.102278000
C	-1.830191000	1.116032000	-0.275745000
C	-0.766569000	0.207598000	-0.217009000
C	-1.045582000	-1.154261000	0.007530000
C	-2.323252000	-1.652717000	0.179169000
C	-3.368740000	-0.733936000	0.124541000
H	-1.667254000	2.170397000	-0.455243000
H	-2.512544000	-2.704155000	0.345968000
C	1.125588000	-0.988200000	-0.195879000
C	0.660079000	0.286806000	-0.352087000
C	2.482686000	-1.443632000	-0.250173000
C	1.531618000	1.463359000	-0.699182000
C	3.473290000	-0.536929000	-0.169950000
H	2.686511000	-2.494694000	-0.410193000
C	3.256185000	0.886379000	0.128279000
H	1.447251000	2.326403000	-0.018590000
O	0.107238000	-1.887141000	0.018828000
Cl	-4.994545000	-1.328589000	0.341427000
Cl	-4.443782000	1.781470000	-0.172960000
Cl	5.143936000	-0.993704000	-0.442296000
Cl	3.119178000	1.262464000	1.854853000
O	1.850164000	1.675564000	-1.900173000
H	3.926462000	1.588934000	-0.351901000

P5-d-2:

C	-3.248200000	0.584042000	-0.189008000
C	-2.000769000	1.151596000	-0.404647000
C	-0.860409000	0.347541000	-0.265335000
C	-1.026505000	-1.004786000	0.077141000
C	-2.257147000	-1.595564000	0.294536000
C	-3.378831000	-0.780646000	0.158580000
H	-1.934211000	2.198126000	-0.669205000
H	-2.353417000	-2.640057000	0.556363000
C	1.164679000	-0.688176000	-0.114506000
C	0.554825000	0.553081000	-0.412063000
C	2.453282000	-1.210165000	-0.088565000
C	1.148411000	1.763612000	-0.967409000
C	3.708143000	-0.537972000	-0.009290000
H	2.500469000	-2.293604000	-0.133584000
C	4.091216000	0.536974000	0.711591000
H	0.426515000	2.592435000	-1.106201000
O	0.175325000	-1.630711000	0.156657000
Cl	-4.946913000	-1.490882000	0.426916000
Cl	-4.661178000	1.598129000	-0.356847000
Cl	5.016428000	-1.347618000	-0.897183000
Cl	3.079904000	1.377843000	1.833691000
O	2.307919000	1.902692000	-1.304799000
H	5.102443000	0.913023000	0.679781000

RC6:

C	3.123953000	0.709100000	-0.160365000
C	1.787724000	1.086993000	-0.218447000
C	0.807079000	0.099453000	-0.129032000
C	1.196781000	-1.240982000	0.025695000
C	2.517166000	-1.643637000	0.087588000
C	3.485858000	-0.645987000	-0.010097000
H	1.530311000	2.132506000	-0.322708000
H	2.795546000	-2.681431000	0.207417000
C	-0.993054000	-1.270462000	0.003381000
C	-0.636676000	0.077347000	-0.147373000
C	-2.302722000	-1.709280000	0.037402000
C	-1.646143000	1.040551000	-0.264857000
C	-3.303633000	-0.742936000	-0.091504000
H	-2.552556000	-2.754318000	0.159247000
C	-2.980643000	0.614993000	-0.252024000
H	-1.419681000	2.081150000	-0.444182000
O	0.111010000	-2.079305000	0.109011000

Cl	5.161892000	-1.123406000	0.062140000
Cl	4.344920000	1.954604000	-0.276568000
Cl	-4.964574000	-1.276005000	-0.056158000
Cl	-4.229994000	1.819367000	-0.447848000
O	-1.328613000	1.813344000	2.019244000
H	-2.255087000	1.731361000	2.305372000

TS6:

C	3.080914000	0.756950000	-0.092612000
C	1.750271000	1.152894000	0.042775000
C	0.768157000	0.175936000	0.095880000
C	1.131983000	-1.170568000	0.030890000
C	2.438031000	-1.596713000	-0.088964000
C	3.420463000	-0.605679000	-0.153830000
H	1.510565000	2.205323000	0.114795000
H	2.699582000	-2.644742000	-0.133408000
C	-1.060764000	-1.195353000	0.139047000
C	-0.685838000	0.183688000	0.304148000
C	-2.361045000	-1.610122000	-0.024968000
C	-1.685110000	1.164071000	0.023294000
C	-3.339515000	-0.616128000	-0.142544000
H	-2.620556000	-2.656628000	-0.105276000
C	-2.992166000	0.762386000	-0.145803000
H	-1.431458000	2.215118000	0.010676000
O	0.030874000	-2.007888000	0.087195000
Cl	5.081521000	-1.112284000	-0.318799000
Cl	4.309793000	1.996547000	-0.176199000
Cl	-4.990744000	-1.117823000	-0.338278000
Cl	-4.219747000	1.984407000	-0.384246000
O	-0.593627000	0.313405000	2.212622000
H	-1.522403000	0.264208000	2.488682000

IM6:

C	3.050865000	0.745349000	-0.034696000
C	1.735742000	1.122328000	0.254563000
C	0.763358000	0.142831000	0.330336000
C	1.111144000	-1.191343000	0.140602000
C	2.399246000	-1.602508000	-0.129865000
C	3.376762000	-0.605921000	-0.219900000
H	1.506132000	2.166776000	0.421142000
H	2.651784000	-2.643843000	-0.273817000
C	-1.080679000	-1.240763000	0.348679000

C	-0.693189000	0.166098000	0.733422000
C	-2.348510000	-1.621130000	0.037239000
C	-1.655250000	1.160684000	0.168373000
C	-3.315061000	-0.604621000	-0.137373000
H	-2.601408000	-2.654971000	-0.158141000
C	-2.924543000	0.775521000	-0.144204000
H	-1.372092000	2.204565000	0.140794000
O	0.021420000	-2.044076000	0.233419000
Cl	5.012336000	-1.097745000	-0.576139000
Cl	4.266877000	1.995210000	-0.149741000
Cl	-4.952930000	-1.076570000	-0.448586000
Cl	-4.092222000	2.001625000	-0.598846000
O	-0.660155000	0.311598000	2.194244000
H	-1.572909000	0.325299000	2.511985000

TS6-a:

C	2.912368000	0.675282000	-0.245954000
C	1.663838000	1.140764000	0.149789000
C	0.660209000	0.268254000	0.585738000
C	0.981843000	-1.094560000	0.627168000
C	2.222742000	-1.584262000	0.257938000
C	3.198597000	-0.694499000	-0.178028000
H	1.470959000	2.204991000	0.128004000
H	2.416011000	-2.647767000	0.289900000
C	-1.167996000	-1.465332000	0.716118000
C	-0.570167000	0.876322000	1.192911000
C	-2.413150000	-1.798461000	0.406722000
C	-1.837052000	1.203172000	0.757595000
C	-3.184218000	-0.720602000	-0.168163000
H	-2.853215000	-2.787395000	0.509309000
C	-2.841017000	0.606161000	-0.079353000
H	-2.219733000	2.107370000	1.237910000
O	0.000498000	-2.011658000	1.001061000
Cl	4.751346000	-1.326545000	-0.651080000
Cl	4.097581000	1.826167000	-0.810646000
Cl	-4.639836000	-1.225434000	-0.994955000
Cl	-3.894436000	1.817913000	-0.820089000
O	-0.130626000	1.528914000	2.327664000
H	-0.878116000	1.945594000	2.775273000

IM6-a:

C	2.918414000	0.636160000	-0.256177000
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C	1.689114000	1.147847000	0.136908000
C	0.649501000	0.328775000	0.602459000
C	0.926397000	-1.045579000	0.662534000
C	2.151798000	-1.578817000	0.298275000
C	3.159866000	-0.739491000	-0.159034000
H	1.535394000	2.217437000	0.096921000
H	2.304588000	-2.647946000	0.354512000
C	-1.222581000	-1.545480000	0.643948000
C	-0.537624000	1.047998000	1.171272000
C	-2.508994000	-1.815861000	0.555937000
C	-1.852049000	1.181095000	0.851230000
C	-3.234206000	-0.733621000	-0.094979000
H	-3.023174000	-2.706589000	0.907758000
C	-2.830379000	0.564980000	-0.040244000
H	-2.319485000	2.015114000	1.382914000
O	-0.051605000	-1.965061000	1.063030000
Cl	4.687364000	-1.436868000	-0.618813000
Cl	4.138351000	1.735718000	-0.846323000
Cl	-4.663644000	-1.219848000	-0.981375000
Cl	-3.744581000	1.794902000	-0.927287000
O	-0.036427000	1.861825000	2.167472000
H	-0.745945000	2.403464000	2.535659000

TS6-a-1 :

C	2.669603000	0.484396000	-0.209555000
C	1.610590000	1.284697000	0.211263000
C	0.477748000	0.722110000	0.816774000
C	0.506793000	-0.645208000	0.972952000
C	1.522955000	-1.485378000	0.607591000
C	2.630438000	-0.904519000	-0.018416000
H	1.663102000	2.355794000	0.061824000
H	1.487632000	-2.550652000	0.796719000
C	-1.910969000	-1.514172000	1.821883000
C	-0.647282000	1.575915000	1.271361000
C	-3.012625000	-1.324350000	1.117260000
C	-1.912715000	1.493642000	0.834279000
C	-2.969437000	-0.556835000	-0.134549000
H	-3.934924000	-1.809951000	1.411610000
C	-2.401403000	0.653624000	-0.272288000
H	-2.641742000	2.193750000	1.242996000
O	-0.734882000	-1.448442000	2.105588000
Cl	3.941839000	-1.933357000	-0.526770000
Cl	4.039410000	1.251882000	-0.971081000

Cl	-3.731573000	-1.376672000	-1.494568000
Cl	-2.328753000	1.447016000	-1.851813000
O	-0.223310000	2.498157000	2.184773000
H	-0.946396000	3.099021000	2.404562000

P6-a-1:

C	2.882985000	0.348016000	-0.086296000
C	1.854993000	1.233555000	-0.400015000
C	0.527826000	0.782216000	-0.488332000
C	0.322961000	-0.564821000	-0.249946000
C	1.291879000	-1.476976000	0.061487000
C	2.611991000	-1.007223000	0.145185000
H	2.083676000	2.276266000	-0.575455000
H	1.077143000	-2.524082000	0.237467000
C	-2.346151000	1.567362000	1.913536000
C	-0.576793000	1.690545000	-0.823561000
C	-2.706015000	0.299744000	1.774980000
C	-1.876764000	1.325765000	-0.898732000
C	-2.765553000	-0.468791000	0.541715000
H	-2.993353000	-0.180322000	2.703406000
C	-2.369669000	-0.035934000	-0.676105000
H	-2.609105000	2.071513000	-1.207824000
O	-2.058724000	2.662403000	2.162676000
Cl	3.881111000	-2.137443000	0.536632000
Cl	4.513384000	0.971692000	0.009954000
Cl	-3.410573000	-2.079508000	0.772279000
Cl	-2.630289000	-1.010462000	-2.124257000
O	-0.161846000	2.964333000	-1.049455000
H	-0.915711000	3.529258000	-1.255206000

TS6-b:

C	3.277285000	0.647202000	0.159755000
C	2.041654000	1.100430000	0.606014000
C	0.953873000	0.231559000	0.535520000
C	1.129826000	-1.065576000	0.046446000
C	2.347774000	-1.543485000	-0.400796000
C	3.427506000	-0.663738000	-0.342762000
H	1.936684000	2.103844000	0.996139000
H	2.467272000	-2.550176000	-0.776626000
C	-1.001480000	-0.927766000	0.608638000
C	-0.442629000	0.331477000	0.903412000
C	-2.353208000	-1.356605000	0.628140000

C	-1.938594000	1.331917000	-0.509219000
C	-3.361711000	-0.539942000	0.205400000
H	-2.575331000	-2.380509000	0.904948000
C	-3.118224000	0.733356000	-0.480937000
H	-1.596896000	2.238691000	-0.984995000
O	-0.039328000	-1.772362000	0.083565000
Cl	4.977063000	-1.234076000	-0.904881000
Cl	4.641291000	1.737472000	0.237907000
Cl	-5.001506000	-1.113198000	0.378721000
Cl	-4.468896000	1.426699000	-1.433948000
O	-0.804771000	1.237579000	1.851145000
H	-1.766542000	1.306203000	1.902578000

IM6-b:

C	-3.478100000	0.714731000	-0.031014000
C	-2.208838000	1.272028000	0.005333000
C	-1.108885000	0.409048000	0.030930000
C	-1.308214000	-0.976909000	0.018751000
C	-2.566921000	-1.555084000	-0.016410000
C	-3.655720000	-0.689188000	-0.041782000
H	-2.082733000	2.346261000	0.013434000
H	-2.705679000	-2.627311000	-0.024815000
C	0.887075000	-0.665639000	0.077959000
C	0.311737000	0.590189000	0.067968000
C	2.197533000	-1.239520000	0.058865000
C	3.499426000	1.331741000	1.530527000
C	3.434994000	-0.702210000	0.149907000
H	2.164984000	-2.315512000	-0.080053000
C	3.815159000	0.682166000	0.441667000
H	3.665834000	2.271705000	2.029952000
O	-0.125908000	-1.636355000	0.047769000
Cl	-5.255402000	-1.386846000	-0.088518000
Cl	-4.858754000	1.788279000	-0.061919000
Cl	4.815931000	-1.781164000	-0.046242000
Cl	4.842052000	1.507240000	-0.795664000
O	0.873209000	1.809061000	0.064756000
H	1.818659000	1.747433000	0.274900000

TS6-b-1: :

C	-3.557857000	0.710880000	-0.030719000
C	-2.303675000	1.299708000	0.001718000
C	-1.181973000	0.464463000	0.024349000

C	-1.343367000	-0.925533000	0.011158000
C	-2.586469000	-1.536389000	-0.024659000
C	-3.697291000	-0.698458000	-0.044896000
H	-2.202635000	2.376673000	0.010036000
H	-2.697752000	-2.611740000	-0.035570000
C	0.848290000	-0.562566000	0.060798000
C	0.233346000	0.690659000	0.046132000
C	2.151382000	-1.114434000	0.115210000
C	3.297450000	1.671773000	1.005824000
C	3.427920000	-0.618124000	0.130943000
H	2.104405000	-2.198775000	0.107989000
C	3.898481000	0.748746000	0.269299000
H	3.670881000	2.612555000	1.388598000
O	-0.145840000	-1.555836000	0.039710000
Cl	-5.276713000	-1.436892000	-0.089914000
Cl	-4.966363000	1.746116000	-0.054927000
Cl	4.701673000	-1.838694000	0.075141000
Cl	5.381522000	1.202736000	-0.627970000
O	0.771166000	1.897274000	0.037447000
H	1.723055000	1.859903000	0.381140000

P6-b-1:

C	-3.452622000	0.726799000	-0.086379000
C	-2.170402000	1.265017000	-0.138023000
C	-1.085755000	0.397212000	-0.075082000
C	-1.295655000	-0.971896000	0.030137000
C	-2.551965000	-1.542475000	0.084404000
C	-3.638694000	-0.666990000	0.024580000
H	-2.024339000	2.334168000	-0.224913000
H	-2.699778000	-2.610413000	0.166968000
C	0.921130000	-0.758791000	0.015941000
C	0.373721000	0.611077000	-0.109166000
C	2.205838000	-1.318294000	-0.047044000
C	3.313687000	1.069604000	1.760458000
C	3.427827000	-0.705367000	0.062207000
H	2.212771000	-2.389091000	-0.227482000
C	3.712175000	0.638051000	0.566233000
H	3.533118000	2.072097000	2.101785000
O	-0.110159000	-1.670643000	0.072985000
Cl	-5.239241000	-1.352542000	0.089939000
Cl	-4.820031000	1.811123000	-0.162220000
Cl	4.835144000	-1.669344000	-0.344296000
Cl	4.672913000	1.670819000	-0.486158000

O	0.990844000	1.657305000	-0.249380000
H	2.747691000	0.415307000	2.411701000

TS6-c:

C	3.006249000	0.752517000	0.008316000
C	1.713555000	1.106431000	0.408147000
C	0.742090000	0.124645000	0.483856000
C	1.064208000	-1.191962000	0.157364000
C	2.334096000	-1.578085000	-0.226044000
C	3.310354000	-0.580402000	-0.302352000
H	1.502021000	2.137629000	0.660814000
H	2.569713000	-2.604816000	-0.469655000
C	-1.107844000	-1.306096000	0.689568000
C	-0.693626000	0.135534000	0.934332000
C	-2.411168000	-1.598883000	0.122107000
C	-1.621051000	1.175370000	0.412614000
C	-3.244187000	-0.577782000	-0.180362000
H	-2.713246000	-2.629937000	-0.005365000
C	-2.828569000	0.829195000	-0.063681000
H	-1.318043000	2.214569000	0.433295000
O	-0.005658000	-2.055197000	0.249421000
Cl	4.915861000	-1.045540000	-0.801861000
Cl	4.220321000	2.005195000	-0.082082000
Cl	-4.846768000	-0.946394000	-0.756251000
Cl	-3.924599000	2.078073000	-0.610265000
O	-0.826124000	-0.077636000	2.374825000
H	-1.172674000	-1.350335000	1.981564000

IM6-c:

C	2.958943000	0.669189000	0.060832000
C	1.732120000	1.037588000	0.608344000
C	0.724076000	0.088282000	0.675731000
C	0.930999000	-1.217951000	0.235409000
C	2.145836000	-1.605375000	-0.311552000
C	3.157024000	-0.647036000	-0.394728000
H	1.583868000	2.044591000	0.975455000
H	2.308849000	-2.614736000	-0.663224000
C	-1.173158000	-1.293601000	1.114811000
C	-0.710362000	0.206143000	1.200088000
C	-2.509266000	-1.541276000	0.504814000
C	-1.555588000	1.176980000	0.417031000

C	-3.213628000	-0.566493000	-0.081225000
H	-2.916361000	-2.541960000	0.576418000
C	-2.707494000	0.818255000	-0.160204000
H	-1.196887000	2.196512000	0.359142000
O	-0.146508000	-2.022409000	0.353278000
Cl	4.682974000	-1.132368000	-1.081442000
Cl	4.226686000	1.866465000	-0.038388000
Cl	-4.789784000	-0.925738000	-0.742913000
Cl	-3.634689000	2.010144000	-1.041951000
O	-0.549382000	0.640891000	2.494749000
H	-1.137559000	-1.695049000	2.131678000

TS6-c-1 :

C	-3.087258000	0.582046000	-0.155784000
C	-1.901088000	1.104846000	-0.672586000
C	-0.752120000	0.327143000	-0.649422000
C	-0.811465000	-0.968253000	-0.145096000
C	-1.970147000	-1.515663000	0.375531000
C	-3.116213000	-0.718944000	0.373942000
H	-1.884930000	2.107112000	-1.081287000
H	-1.996849000	-2.527400000	0.756317000
C	1.151821000	-1.107053000	-1.249420000
C	0.642974000	0.746776000	-1.093792000
C	2.592274000	-1.250184000	-1.087737000
C	1.486328000	1.187251000	0.099073000
C	3.267088000	-0.488930000	-0.207790000
H	3.128832000	-1.913216000	-1.756723000
C	2.629766000	0.624491000	0.509599000
H	1.099039000	2.049090000	0.632823000
O	0.381874000	-1.642463000	-0.210537000
Cl	-4.584901000	-1.393201000	1.027004000
Cl	-4.519098000	1.579924000	-0.179084000
Cl	4.986831000	-0.708045000	-0.039405000
Cl	3.449287000	1.279044000	1.917713000
O	0.802776000	1.342516000	-2.195232000
H	0.738935000	-1.338450000	-2.229973000

P6-c-1:

C	-3.139558000	0.634213000	-0.129593000
C	-1.925381000	1.267309000	-0.378272000
C	-0.721060000	0.576052000	-0.247748000
C	-0.758080000	-0.783178000	0.086009000

C	-1.958067000	-1.429287000	0.335903000
C	-3.153430000	-0.716586000	0.241934000
H	-1.910092000	2.313385000	-0.657119000
H	-1.963222000	-2.480415000	0.591866000
C	1.075016000	-1.651758000	-1.047103000
C	0.579571000	1.311012000	-0.406930000
C	2.341756000	-1.210052000	-1.288581000
C	1.593457000	1.099171000	0.686794000
C	3.178339000	-0.411523000	-0.480987000
H	2.764161000	-1.542776000	-2.230613000
C	2.752080000	0.419844000	0.617223000
H	1.336078000	1.600959000	1.615117000
O	0.426185000	-1.498017000	0.157298000
Cl	-4.644955000	-1.550889000	0.575133000
Cl	-4.615092000	1.552090000	-0.280323000
Cl	4.868706000	-0.379948000	-0.919567000
Cl	3.844232000	0.529627000	2.007103000
O	0.744826000	2.137138000	-1.276163000
H	0.517979000	-2.200398000	-1.800100000

TS6-c-2 :

C	3.039913000	0.478285000	0.359362000
C	1.905993000	0.704725000	1.132177000
C	0.792123000	-0.100912000	0.931356000
C	0.808721000	-1.117461000	-0.022171000
C	1.927363000	-1.364230000	-0.804957000
C	3.041496000	-0.549275000	-0.606885000
H	1.898755000	1.487473000	1.880569000
H	1.940858000	-2.154249000	-1.543124000
C	-1.185263000	-1.430850000	1.032301000
C	-0.542035000	-0.122154000	1.585829000
C	-2.634882000	-1.422136000	0.669020000
C	-1.445405000	1.265325000	0.240979000
C	-3.244614000	-0.403265000	0.053725000
H	-3.218572000	-2.294008000	0.934154000
C	-2.561249000	0.851799000	-0.312420000
H	-0.816396000	2.136292000	0.179866000
O	-0.351195000	-1.819848000	-0.103743000
Cl	4.451004000	-0.845269000	-1.587751000
Cl	4.448514000	1.479488000	0.616552000
Cl	-4.952032000	-0.519863000	-0.299952000
Cl	-3.255443000	1.844518000	-1.611053000

O	-0.894316000	0.440834000	2.626839000
H	-1.018255000	-2.183344000	1.811317000

P6-c-2:

C	-3.046519000	0.486409000	0.308484000
C	-2.121480000	1.519808000	0.322746000
C	-0.886814000	1.318065000	-0.291207000
C	-0.583446000	0.102482000	-0.902961000
C	-1.492967000	-0.946532000	-0.933702000
C	-2.725864000	-0.739183000	-0.319780000
H	-2.355042000	2.463777000	0.798765000
H	-1.258224000	-1.888571000	-1.409634000
C	1.298830000	1.323331000	-1.247758000
C	0.277054000	2.193647000	-0.449563000
C	2.647315000	1.227649000	-0.599912000
C	1.481296000	-0.927066000	1.580341000
C	3.119948000	0.249759000	0.173598000
H	3.292193000	2.075078000	-0.803355000
C	2.397984000	-0.940783000	0.658002000
H	0.833684000	-1.567492000	2.153135000
O	0.656645000	0.046151000	-1.447727000
Cl	-3.876094000	-2.046107000	-0.346023000
Cl	-4.598375000	0.729104000	1.072563000
Cl	4.786910000	0.345529000	0.745987000
Cl	2.920293000	-2.504931000	-0.058560000
O	0.458499000	3.332455000	-0.093559000
H	1.417758000	1.781725000	-2.235773000

TS6-c-3 :

C	2.684218000	0.877678000	0.028226000
C	1.427929000	1.111233000	0.607650000
C	0.611212000	0.024688000	0.746282000
C	0.932833000	-1.274216000	0.425211000
C	2.182276000	-1.504872000	-0.144428000
C	3.048907000	-0.426752000	-0.336704000
H	1.145282000	2.108574000	0.919644000
H	2.477550000	-2.505922000	-0.431411000
C	-1.269228000	-1.742880000	0.937743000
C	-1.186162000	-0.443470000	1.784650000
C	-2.020101000	-1.593904000	-0.354882000
C	-2.071203000	0.672652000	1.385792000
C	-2.752140000	-0.514413000	-0.651962000

H	-1.965856000	-2.427820000	-1.043956000
C	-2.817418000	0.633931000	0.267399000
H	-2.102535000	1.521335000	2.056863000
O	0.047107000	-2.272997000	0.674331000
Cl	4.607176000	-0.752609000	-1.052393000
Cl	3.760505000	2.232127000	-0.206918000
Cl	-3.624978000	-0.444494000	-2.164245000
Cl	-3.874192000	1.965672000	-0.108614000
O	-0.696408000	-0.492667000	2.927246000
H	-1.751481000	-2.500712000	1.563267000

P6-c-3:

C	2.446747000	-0.874069000	-0.060391000
C	1.111641000	-1.045324000	0.321085000
C	0.362724000	0.069467000	0.652066000
C	0.938068000	1.337053000	0.607954000
C	2.257271000	1.535094000	0.241107000
C	3.011377000	0.407342000	-0.093876000
H	0.694797000	-2.043372000	0.352716000
H	2.691026000	2.524770000	0.205438000
C	-1.244733000	1.774693000	0.981247000
C	-1.974135000	2.175063000	-0.319718000
C	-1.059849000	0.242609000	1.178742000
C	-2.859028000	1.195987000	-0.920349000
C	-2.117385000	-0.604579000	0.533680000
H	-1.063690000	0.016992000	2.251566000
C	-2.935238000	-0.123022000	-0.476235000
H	-3.465241000	1.527334000	-1.753281000
O	0.083831000	2.333256000	0.983392000
Cl	4.675023000	0.647051000	-0.565249000
Cl	3.377423000	-2.291990000	-0.485658000
Cl	-2.227150000	-2.231708000	1.104383000
Cl	-4.099519000	-1.172373000	-1.251695000
O	-1.837991000	3.295918000	-0.779659000
H	-1.786574000	2.232356000	1.811528000

TS6-d:

C	3.092500000	0.738710000	-0.059854000
C	1.774233000	1.131586000	0.184619000
C	0.793579000	0.159532000	0.282643000
C	1.143634000	-1.183226000	0.172217000
C	2.435897000	-1.609988000	-0.053661000

C	3.417653000	-0.621657000	-0.174129000
H	1.545305000	2.183322000	0.300157000
H	2.688098000	-2.658005000	-0.137571000
C	-1.051164000	-1.224973000	0.385502000
C	-0.661018000	0.200925000	0.662610000
C	-2.301419000	-1.620813000	0.091580000
C	-1.700391000	1.214636000	0.186274000
C	-3.313225000	-0.614991000	-0.118164000
H	-2.541891000	-2.659319000	-0.092577000
C	-3.011569000	0.722250000	-0.169155000
H	-1.337475000	2.117835000	-0.298842000
O	0.054723000	-2.031376000	0.305835000
Cl	5.058258000	-1.133131000	-0.471816000
Cl	4.315500000	1.977976000	-0.208686000
Cl	-4.924348000	-1.194924000	-0.423572000
Cl	-4.208537000	1.930911000	-0.555490000
O	-0.857380000	0.640564000	2.028432000
H	-1.739889000	1.516583000	1.424404000

IM6-d:

C	3.104468000	0.748679000	-0.006746000
C	1.778714000	1.138736000	0.177004000
C	0.795512000	0.161119000	0.188099000
C	1.137816000	-1.190604000	0.073786000
C	2.443554000	-1.605533000	-0.094411000
C	3.429538000	-0.614425000	-0.134899000
H	1.538147000	2.185463000	0.308350000
H	2.702257000	-2.650344000	-0.196131000
C	-1.070386000	-1.226079000	0.156599000
C	-0.701317000	0.214280000	0.475729000
C	-2.323120000	-1.615862000	-0.073985000
C	-1.616978000	1.190930000	-0.263833000
C	-3.362408000	-0.583966000	-0.120665000
H	-2.590035000	-2.648142000	-0.256790000
C	-3.055488000	0.723316000	-0.210843000
H	-1.311321000	1.282771000	-1.314775000
O	0.053221000	-2.028200000	0.106379000
Cl	5.079967000	-1.120665000	-0.354419000
Cl	4.337802000	1.982645000	-0.061736000
Cl	-5.008986000	-1.165887000	-0.116039000
Cl	-4.259948000	1.970016000	-0.369663000
O	-0.641241000	0.439170000	1.843308000
H	-1.524490000	2.175109000	0.198403000

TS6-d-1: :

C	3.151010000	0.729614000	0.084228000
C	1.837385000	1.140408000	0.321442000
C	0.827433000	0.194333000	0.293534000
C	1.142398000	-1.139745000	0.078895000
C	2.427756000	-1.590278000	-0.138542000
C	3.440660000	-0.625982000	-0.143003000
H	1.624639000	2.181175000	0.530588000
H	2.653146000	-2.636311000	-0.294855000
C	-1.074650000	-1.190501000	0.270266000
C	-0.637999000	0.255965000	0.656493000
C	-2.323789000	-1.621099000	0.008065000
C	-1.669523000	1.003293000	-0.828862000
C	-3.364672000	-0.636303000	-0.154001000
H	-2.538834000	-2.671303000	-0.148889000
C	-3.040432000	0.642136000	-0.518405000
H	-1.213884000	0.463123000	-1.656145000
O	0.027669000	-1.976120000	0.116149000
Cl	5.074913000	-1.161168000	-0.429524000
Cl	4.415219000	1.934911000	0.087162000
Cl	-5.001477000	-1.141136000	0.129686000
Cl	-4.208474000	1.929768000	-0.464080000
O	-1.045529000	0.859832000	1.671172000
H	-1.438738000	2.062205000	-0.805071000

P6-d-1:

C	-3.452688000	0.726797000	-0.086166000
C	-2.170479000	1.265038000	-0.137587000
C	-1.085831000	0.397213000	-0.074841000
C	-1.295674000	-0.971933000	0.029953000
C	-2.552000000	-1.542526000	0.083998000
C	-3.638731000	-0.667038000	0.024392000
H	-2.024373000	2.334212000	-0.224128000
H	-2.699816000	-2.610484000	0.166300000
C	0.921113000	-0.758759000	0.015921000
C	0.373609000	0.611183000	-0.108824000
C	2.205801000	-1.318157000	-0.046839000
C	3.314335000	1.070471000	1.760026000
C	3.427847000	-0.705325000	0.062505000
H	2.212848000	-2.389000000	-0.227043000
C	3.712389000	0.638288000	0.565902000

H	2.748470000	0.416605000	2.411818000
O	-0.110198000	-1.670663000	0.072624000
Cl	-5.239268000	-1.352624000	0.089509000
Cl	-4.820121000	1.811104000	-0.161785000
Cl	4.835165000	-1.669631000	-0.343319000
Cl	4.672869000	1.670541000	-0.487320000
O	0.990665000	1.657462000	-0.248723000
H	3.534007000	2.073113000	2.100761000

TS6-d-2 :

C	3.303247000	0.756864000	-0.158131000
C	2.016498000	1.285892000	0.023850000
C	0.995956000	0.385914000	0.171671000
C	1.163142000	-0.980320000	0.258395000
C	2.434912000	-1.510161000	0.096432000
C	3.500982000	-0.631644000	-0.115687000
H	1.865048000	2.357901000	0.034388000
H	2.599604000	-2.579192000	0.135490000
C	-1.082530000	-1.014362000	0.400090000
C	-1.004682000	0.406132000	0.894977000
C	-2.247413000	-1.501066000	-0.045758000
C	-1.945335000	1.356469000	0.155595000
C	-3.407793000	-0.625016000	-0.188126000
H	-2.343398000	-2.543229000	-0.323418000
C	-3.286080000	0.712313000	-0.108947000
H	-1.509407000	1.653436000	-0.807032000
O	0.061115000	-1.769460000	0.465528000
Cl	5.091293000	-1.316863000	-0.323823000
Cl	4.628624000	1.861442000	-0.422696000
Cl	-4.923868000	-1.417093000	-0.536108000
Cl	-4.610155000	1.805789000	-0.376679000
O	-0.605699000	0.662626000	2.046761000
H	-2.060801000	2.253986000	0.764313000

P6-d-2:

C	-3.627875000	-0.564772000	-0.679639000
C	-2.403377000	-1.039324000	-1.171704000
C	-1.266438000	-0.423621000	-0.727522000
C	-1.224586000	0.611853000	0.179781000
C	-2.444793000	1.078505000	0.666666000
C	-3.635121000	0.494904000	0.236562000
H	-2.384329000	-1.858595000	-1.880184000

H	-2.458283000	1.890242000	1.383178000
C	1.115734000	0.591992000	0.426251000
C	1.342470000	-0.663076000	1.175611000
C	2.117276000	1.189235000	-0.253166000
C	2.690704000	-1.346368000	0.945233000
C	3.449099000	0.619785000	-0.353278000
H	1.933451000	2.142614000	-0.733240000
C	3.736244000	-0.567040000	0.210820000
H	2.475159000	-2.267070000	0.385239000
O	-0.077886000	1.250790000	0.585630000
Cl	-5.134501000	1.120485000	0.877861000
Cl	-5.104432000	-1.315053000	-1.231438000
Cl	4.622352000	1.556476000	-1.243320000
Cl	5.305216000	-1.305614000	0.116328000
O	0.523299000	-1.135627000	1.934859000
H	3.067881000	-1.677926000	1.917091000

TS6-e:

C	3.100469000	0.783384000	-0.348443000
C	1.791297000	1.259442000	-0.172374000
C	0.832615000	0.355427000	0.204570000
C	1.110378000	-0.974753000	0.443187000
C	2.398782000	-1.460263000	0.292618000
C	3.394275000	-0.565267000	-0.110587000
H	1.575926000	2.307940000	-0.339500000
H	2.635161000	-2.498942000	0.484736000
C	-1.103748000	-1.060792000	0.723258000
C	-1.074218000	0.281146000	1.232953000
C	-2.142813000	-1.512943000	-0.054386000
C	-2.158461000	1.123046000	0.882937000
C	-3.222911000	-0.668354000	-0.345574000
H	-2.096803000	-2.506459000	-0.480669000
C	-3.203524000	0.664919000	0.097142000
H	-2.180384000	2.132899000	1.273179000
O	0.055050000	-1.793468000	0.821193000
Cl	5.017049000	-1.183510000	-0.308322000
Cl	4.336132000	1.909521000	-0.865037000
Cl	-4.532011000	-1.292570000	-1.304014000
Cl	-4.508080000	1.760904000	-0.283529000
O	-0.375806000	0.566871000	2.406416000
H	-1.023230000	0.723543000	3.104916000

P6-e:

C	3.533610000	-0.261181000	0.878525000
C	2.280441000	-0.557327000	1.433226000
C	1.172038000	-0.224210000	0.704202000
C	1.186885000	0.371553000	-0.538610000
C	2.437477000	0.662517000	-1.085902000
C	3.597780000	0.349057000	-0.380671000
H	2.215928000	-1.027448000	2.407230000
H	2.497103000	1.128371000	-2.061628000
C	-1.152569000	0.271617000	-0.798616000
C	-1.534636000	-1.063794000	-0.993899000
C	-2.036290000	1.178265000	-0.237018000
C	-2.806417000	-1.463421000	-0.594054000
C	-3.312078000	0.777864000	0.156933000
H	-1.723220000	2.206168000	-0.110636000
C	-3.693487000	-0.552691000	-0.021122000
H	-3.123588000	-2.490333000	-0.734905000
O	0.073431000	0.723090000	-1.254651000
Cl	5.134832000	0.736298000	-1.116818000
Cl	4.973186000	-0.664749000	1.781750000
Cl	-4.387108000	1.959474000	0.861972000
Cl	-5.273965000	-1.121871000	0.453346000
O	-0.635725000	-1.899862000	-1.577152000
H	-1.002433000	-2.787666000	-1.647849000

Table S2. Rotational constants and vibrational frequencies at B3LYP/6-311+G(d,p)

Species	I_a, I_b, I_c (GHZ)	Frequencies (cm ⁻¹) (scaled by 0.9688) Ref. 37
2,3,7,8-TCDF	0.8385 0.1311 0.1134	44.8, 51.8, 100.5, 121.4, 141.2, 187.9, 197.9, 238.0, 245.9, 252.4, 252.7, 338.6, 371.7, 382.4, 387.8, 427.2, 429.2, 439.9, 471.7, 576.3, 618.4, 628.0, 630.2, 656.9, 687.8, 707.0, 709.7, 715.2, 788.6, 837.0, 843.9, 861.3, 865.0, 902.1, 910.5, 1020.3, 1075.3, 1077.4, 1154.3, 1179.0, 1203.3, 1207.8, 1239.5, 1275.0, 1288.8, 1367.8, 1377.1, 1423.2, 1440.0, 1547.5, 1558.9, 1577.9, 1613.3, 3101.8, 3102.7, 3116.3, 3116.5
OH	0.0 559.7 559.7	3593.2
RC1	0.6639 0.1256 0.1095	36.0, 45.5, 50.4, 55.3, 100.1, 106.3, 120.9, 126.8, 152.7, 187.9, 198.0, 240.5, 245.4, 251.8, 253.1, 337.4, 371.1, 378.5, 387.5, 421.0, 427.9, 438.2, 442.4, 472.3, 575.9, 604.1, 625.4, 629.8, 655.9, 687.0, 699.3, 707.6, 715.7, 789.6, 827.8, 841.8, 861.3, 866.2, 903.2, 911.3, 1019.8,

		1074.8, 1077.1, 1153.7, 1180.3, 1203.0, 1208.1, 1238.5, 1278.7, 1292.9, 1357.2, 1375.0, 1420.4, 1437.4, 1542.1, 1557.4, 1567.7, 1609.7, 3103.8, 3104.8, 3119.9, 3136.9, 3617.5
TS1	0.6996 0.1284 0.1126	348.9i , 42.7, 49.4, 77.3, 104.7, 110.5, 142.9, 174.9, 182.0, 189.3, 199.3, 230.2, 246.6, 248.7, 268.6, 336.5, 364.7, 375.3, 394.7, 411.7, 426.1, 443.4, 471.3, 576.5, 590.0, 625.9, 628.8, 650.2, 663.9, 682.9, 706.9, 719.5, 745.2, 781.2, 828.6, 842.3, 856.9, 864.1, 896.1, 911.8, 1015.9, 1069.8, 1075.8, 1151.2, 1152.8, 1200.5, 1208.0, 1240.1, 1254.1, 1279.0, 1358.1, 1370.7, 1411.5, 1428.8, 1498.2, 1540.4, 1557.7, 1597.1, 3104.6, 3105.6, 3121.4, 3128.1, 3646.6
IM1	0.6704 0.1309 0.1150	38.6, 41.8, 73.6, 115.5, 128.0, 162.4, 184.7, 189.3, 197.7, 213.3, 234.3, 246.4, 253.2, 320.8, 338.0, 358.8, 369.6, 407.0, 428.4, 440.8, 474.3, 493.8, 577.3, 589.9, 609.1, 613.4, 643.5, 645.5, 680.3, 698.0, 720.9, 745.9, 786.1, 837.9, 843.0, 860.8, 864.3, 904.0, 928.8, 984.0, 1011.0, 1058.6, 1077.8, 1145.1, 1164.6, 1188.1, 1204.9, 1227.1, 1249.5, 1268.8, 1289.0, 1338.8, 1383.7, 1418.6, 1454.8, 1523.6, 1546.2, 1575.7, 3090.9, 3103.0, 3114.2, 3118.6, 3687.7
TS1-a	0.5483 0.1352 0.1223	298.4i , 25.5, 45.7, 58.0, 80.2, 126.3, 163.0, 189.6, 195.9, 199.3, 230.1, 238.0, 259.8, 292.0, 306.9, 317.4, 334.1, 370.7, 389.1, 393.5, 419.6, 449.2, 454.4, 517.9, 580.0, 587.3, 596.5, 621.9, 628.1, 668.0, 676.0, 703.8, 711.1, 756.8, 787.7, 806.8, 838.6, 854.8, 870.6, 909.7, 966.9, 1035.3, 1071.1, 1088.7, 1138.6, 1192.1, 1208.4, 1257.6, 1283.8, 1315.0, 1365.4, 1393.1, 1426.1, 1474.5, 1502.2, 1545.2, 1557.7, 1589.4, 3070.5, 3106.4, 3119.1, 3145.8, 3679.1
IM1-a	0.6236 0.1245 0.1063	16.9, 40.1, 48.0, 81.3, 93.3, 120.6, 155.0, 170.5, 196.4, 202.7, 225.9, 237.8, 252.0, 270.5, 331.7, 337.8, 372.4, 387.0, 406.4, 423.0, 427.6, 454.3, 479.5, 525.5, 582.6, 612.1, 616.6, 626.4, 660.9, 673.3, 681.5, 698.2, 704.7, 715.4, 769.0, 810.9, 831.2, 853.0, 892.5, 909.4, 973.8, 996.5, 1076.7, 1114.6, 1147.7, 1204.0, 1229.9, 1290.7, 1296.1, 1345.6, 1374.3, 1414.0, 1438.4, 1535.0, 1559.0, 1574.3, 1602.4, 1614.8, 3061.3, 3100.0, 3119.3, 3175.4, 3459.2
TS1-a-1	0.6268 0.1231 0.1045	147.2i , 12.6, 43.2, 75.5, 87.5, 117.7, 146.3, 188.6, 196.3, 208.3, 222.8, 228.8, 251.1, 278.2, 335.4, 347.5, 372.3, 385.0, 410.3, 424.6, 438.4, 466.0, 509.7, 531.3, 595.5, 613.1, 617.9, 629.3, 675.2, 687.0, 699.8, 702.8, 721.9, 756.6, 771.4, 829.3, 831.8, 854.2, 893.5, 913.0, 980.5, 1007.4, 1076.8, 1129.1, 1151.6, 1205.3, 1236.3, 1290.8, 1325.4, 1360.1, 1375.8, 1416.5, 1436.9, 1462.1, 1542.2, 1560.6, 1571.3, 1601.3, 2711.3, 3061.1, 3099.7, 3118.7, 3129.3,
PI-a-1	0.6384 0.1265 0.1088	21.4, 38.9, 42.9, 71.0, 93.6, 108.4, 128.7, 169.1, 183.1, 197.3, 220.2, 227.6, 246.0, 279.1, 337.9, 351.0, 364.3, 393.1, 408.6, 442.3, 458.5, 498.1, 537.4, 599.7, 612.7, 617.2, 632.5, 672.8, 682.5, 697.2, 703.5, 720.4, 736.7, 789.4, 837.5, 856.1, 866.1, 891.4, 905.0, 930.5, 964.4, 993.3, 1080.8, 1105.9, 1166.2, 1206.3, 1236.0, 1269.1, 1312.6, 1355.2, 1379.7, 1400.3, 1422.7, 1473.3, 1533.8, 1568.8, 1605.9, 1757.6, 3052.2,

		3057.9, 3103.2, 3120.8, 3150.2
TS1-a-2	0.5934 0.1346 0.1177	2077.1i , 19.4, 31.8, 39.9, 58.1, 93.1, 109.3, 142.5, 159.6, 187.7, 196.3, 204.7, 221.6, 252.8, 285.3, 326.5, 336.7, 350.5, 392.4, 421.4, 440.1, 456.2, 481.1, 513.1, 583.2, 607.1, 620.6, 628.0, 644.7, 650.1, 680.7, 702.5, 715.4, 721.0, 756.0, 801.5, 833.7, 843.3, 862.3, 878.8, 904.4, 988.7, 1001.2, 1070.5, 1111.1, 1132.7, 1201.5, 1218.1, 1286.5, 1315.6, 1338.5, 1368.9, 1430.3, 1533.1, 1561.2, 1588.0, 1596.8, 1632.4, 1723.3, 3065.4, 3105.2, 3120.2, 3188.2
P1-a-2	0.5079 0.1574 0.1415	18.6, 35.2, 40.0, 55.2, 93.1, 104.6, 142.1, 166.3, 188.1, 190.9, 195.9, 222.7, 243.5, 289.9, 325.5, 339.0, 345.0, 378.7, 424.9, 450.1, 465.9, 491.1, 518.3, 578.5, 606.4, 618.6, 631.6, 652.7, 658.9, 678.9, 696.0, 713.6, 719.8, 775.8, 826.3, 842.7, 855.2, 883.8, 900.1, 928.3, 976.3, 1007.8, 1062.4, 1083.4, 1163.0, 1188.8, 1201.6, 1224.6, 1274.6, 1281.4, 1318.6, 1360.8, 1443.8, 1563.4, 1594.4, 1598.9, 1637.4, 1831.8, 2920.7, 3080.8, 3101.1, 3119.1, 3188.0
TS1-b	0.6447 0.1311 0.1163	384.7i , 29.4, 39.4, 68.3, 95.9, 132.2, 156.8, 173.1, 192.6, 205.2, 214.9, 231.0, 243.8, 284.0, 318.1, 343.2, 356.6, 387.7, 413.7, 426.1, 430.5, 433.3, 481.7, 497.5, 520.4, 556.0, 587.6, 616.4, 650.0, 655.9, 675.4, 721.0, 741.7, 767.7, 789.3, 846.0, 863.7, 871.7, 899.6, 918.9, 1034.6, 1081.1, 1096.2, 1126.8, 1164.9, 1200.1, 1205.7, 1209.7, 1245.7, 1276.5, 1331.6, 1358.5, 1413.2, 1433.6, 1513.4, 1519.7, 1577.0, 1646.2, 2965.8, 3025.1, 3108.4, 3116.6, 3703.3
IM1-b	0.5738 0.1423 0.1245	24.5, 39.2, 68.0, 80.2, 101.4, 115.7, 139.2, 189.2, 192.7, 204.1, 240.5, 255.3, 287.6, 317.8, 324.1, 329.8, 359.8, 379.9, 400.5, 416.1, 427.4, 470.3, 479.3, 517.2, 553.5, 588.4, 600.6, 617.9, 654.1, 669.8, 677.3, 706.3, 750.3, 761.5, 768.8, 853.6, 862.6, 873.5, 884.1, 950.0, 996.4, 1097.4, 1105.9, 1123.6, 1154.5, 1196.0, 1215.3, 1218.4, 1245.4, 1263.8, 1324.8, 1362.1, 1432.7, 1500.3, 1556.9, 1584.6, 1658.0, 1704.3, 2966.4, 3055.8, 3108.8, 3116.0, 3705.4
TS1-b-1	0.5810 0.1407 0.1251	2023.7i , 30.1, 39.2, 70.6, 80.9, 111.6, 122.4, 142.0, 189.1, 191.1, 203.0, 243.3, 255.9, 288.1, 300.6, 328.3, 331.2, 357.0, 398.3, 408.9, 434.8, 447.0, 464.7, 513.7, 544.1, 586.9, 601.8, 634.0, 639.9, 667.2, 669.4, 703.1, 717.8, 766.6, 772.7, 850.1, 870.7, 882.8, 897.3, 953.3, 1014.2, 1077.7, 1093.0, 1104.2, 1121.8, 1179.2, 1215.4, 1241.4, 1255.6, 1278.4, 1327.6, 1391.2, 1424.7, 1475.5, 1491.6, 1552.6, 1567.1, 1726.6, 1846.7, 2959.4, 3048.5, 3111.6, 3115.4
P1-b-1	0.5502 0.1459 0.1315	24.2, 38.8, 64.6, 69.6, 112.2, 117.3, 149.1, 184.6, 191.4, 202.1, 233.1, 254.2, 271.7, 293.6, 310.7, 326.0, 356.9, 393.8, 408.8, 421.7, 440.9, 466.3, 513.5, 526.8, 591.8, 600.8, 625.9, 651.1, 665.0, 679.5, 696.6, 744.0, 757.3, 834.6, 842.6, 857.0, 874.1, 924.6, 942.7, 980.0, 1078.2, 1093.1, 1110.7, 1119.6, 1185.6, 1211.2, 1215.5, 1245.2, 1255.7, 1292.7, 1331.8, 1410.9, 1420.8, 1486.1, 1547.4, 1605.1, 1724.3, 1781.3, 2963.9, 2981.1, 3004.3, 3110.6, 3115.2
TS1-b-2	0.5130	1797.5i , 35.2, 42.9, 55.6, 98.2, 131.3, 165.6, 169.3, 191.7, 209.9, 234.4,

	0.1627 0.1549	260.2, 299.3, 317.1, 333.9, 360.4, 400.6, 409.2, 416.8, 447.0, 452.0, 486.0, 499.1, 547.4, 576.5, 610.8, 636.2, 652.3, 655.4, 676.6, 700.2, 743.9, 751.8, 777.2, 803.7, 848.8, 864.9, 872.7, 880.9, 944.8, 1034.6, 1092.7, 1096.6, 1111.2, 1132.9, 1162.1, 1210.3, 1221.4, 1259.5, 1285.0, 1293.4, 1341.3, 1414.8, 1432.0, 1496.3, 1515.5, 1558.9, 1561.5, 1588.5, 3015.1, 3080.0, 3106.6, 3114.1
P1-b-2	0.6503 0.1364 0.1220	16.2, 36.5, 47.9, 81.1, 88.5, 137.4, 146.4, 185.7, 205.8, 217.7, 225.4, 246.5, 269.3, 289.8, 335.0, 338.2, 381.6, 405.8, 427.6, 441.3, 486.1, 498.6, 530.7, 553.9, 607.2, 615.4, 649.6, 655.3, 677.6, 712.7, 727.0, 753.3, 782.3, 804.4, 841.9, 862.8, 868.5, 887.0, 933.5, 953.1, 967.7, 1098.8, 1116.1, 1156.7, 1174.4, 1218.6, 1222.8, 1258.4, 1283.5, 1326.9, 1356.3, 1405.4, 1433.6, 1456.2, 1531.8, 1573.0, 1582.0, 1726.3, 2994.6, 3044.7, 3095.5, 3117.7, 3118.5
TS1-c	0.6808 0.1296 0.1134	1704.1i , 37.8, 46.0, 80.7, 117.7, 129.3, 177.8, 186.3, 197.4, 212.4, 232.8, 244.1, 259.1, 322.2, 335.8, 359.7, 370.8, 412.3, 428.0, 458.9, 480.4, 514.9, 570.4, 597.6, 614.0, 621.4, 651.6, 655.7, 682.3, 718.7, 728.0, 743.8, 822.4, 837.6, 842.4, 850.9, 868.3, 898.5, 919.4, 994.2, 1033.4, 1051.0, 1078.7, 1109.0, 1138.9, 1162.5, 1192.2, 1206.6, 1240.5, 1270.9, 1295.7, 1331.2, 1375.0, 1389.9, 1428.5, 1536.7, 1583.6, 1590.3, 1885.7, 3050.2, 3093.7, 3102.8, 3118.4
IM1-c	0.7155 0.1289 0.1129	38.4, 48.0, 85.8, 101.7, 121.7, 171.5, 184.7, 195.8, 207.9, 211.9, 238.5, 244.1, 301.8, 314.8, 327.5, 367.4, 377.6, 427.1, 427.4, 472.9, 482.4, 550.0, 569.3, 594.4, 616.8, 628.9, 645.4, 662.1, 691.0, 717.1, 728.8, 823.6, 834.3, 844.4, 867.4, 884.8, 903.2, 915.5, 985.2, 1010.7, 1043.0, 1079.3, 1123.4, 1143.1, 1165.1, 1203.0, 1208.6, 1254.7, 1271.4, 1290.8, 1302.2, 1363.9, 1405.3, 1428.7, 1440.7, 1537.3, 1570.9, 1591.1, 2933.5, 3002.5, 3089.6, 3103.0, 3118.9
TS1-c-1	0.6824 0.1305 0.1140	450.0i , 35.9, 44.8, 70.5, 92.8, 125.3, 149.2, 181.5, 193.8, 199.3, 213.6, 239.4, 276.9, 325.9, 336.3, 354.7, 356.3, 380.0, 419.4, 442.3, 464.1, 482.8, 570.6, 574.3, 589.4, 603.0, 608.0, 636.5, 658.2, 669.1, 689.4, 711.3, 722.1, 802.8, 837.7, 843.1, 864.9, 869.4, 906.7, 956.2, 982.9, 1027.9, 1082.5, 1094.2, 1156.6, 1187.4, 1207.3, 1241.1, 1266.7, 1303.3, 1374.4, 1385.8, 1414.5, 1424.6, 1518.6, 1567.5, 1569.2, 1602.0, 3017.7, 3071.0, 3102.0, 3115.9, 3119.6
P1-c-1	0.6385 0.1265 0.1088	21.3, 38.7, 42.7, 71.0, 93.7, 108.4, 128.9, 169.1, 183.1, 197.4, 220.1, 227.6, 245.9, 279.2, 338.0, 351.0, 364.3, 393.1, 408.5, 442.3, 458.5, 498.1, 537.5, 599.8, 612.6, 617.1, 632.5, 672.8, 682.5, 697.1, 703.4, 720.4, 736.7, 789.5, 837.5, 856.1, 866.1, 891.3, 904.9, 930.6, 964.5, 993.4, 1080.8, 1106.0, 1166.3, 1206.3, 1236.1, 1269.2, 1312.6, 1355.2, 1379.8, 1400.2, 1422.8, 1473.2, 1533.9, 1568.9, 1605.8, 1757.6, 3052.2, 3057.9, 3103.2, 3120.8, 3150.2
TS1-c-2	0.7142 0.1275 0.1109	290.5i , 31.1, 43.8, 87.7, 93.3, 111.1, 137.4, 174.8, 182.3, 201.1, 209.6, 230.5, 241.2, 297.4, 313.3, 323.2, 344.7, 373.8, 413.4, 431.0, 443.4, 472.1, 501.4, 541.2, 558.1, 608.9, 615.3, 639.7, 662.4, 667.4, 702.7,

		754.3, 769.5, 807.6, 845.2, 865.9, 872.0, 914.2, 939.9, 981.4, 1018.7, 1082.8, 1101.3, 1132.6, 1183.6, 1200.2, 1216.0, 1259.6, 1265.9, 1286.4, 1351.2, 1407.5, 1429.5, 1511.4, 1558.3, 1571.0, 1595.1, 1684.9, 2951.3, 2989.4, 2997.8, 3108.5, 3117.7
P1-c-2	0.6088 0.1411 0.1229	23.0, 46.1, 69.3, 71.9, 100.5, 113.3, 150.4, 177.5, 190.0, 202.7, 211.6, 259.7, 272.2, 291.1, 324.8, 347.2, 365.1, 387.9, 417.5, 428.5, 438.4, 446.4, 518.4, 535.5, 578.0, 593.4, 620.4, 641.8, 654.6, 697.9, 711.4, 754.5, 778.8, 815.3, 832.1, 850.0, 882.8, 914.5, 943.5, 982.5, 1052.9, 1076.6, 1088.1, 1120.5, 1161.1, 1208.4, 1213.1, 1234.4, 1265.4, 1286.2, 1331.8, 1404.3, 1421.7, 1463.5, 1527.9, 1592.2, 1782.1, 1796.9, 2957.9, 2985.9, 3036.6, 3113.1, 3115.4
TS1-c-3	0.6897 0.1301 0.1138	793.6i , 41.4, 45.1, 84.8, 98.5, 119.0, 173.1, 188.4, 197.8, 204.6, 222.8, 234.0, 253.8, 305.1, 321.2, 324.8, 352.1, 373.3, 419.8, 433.4, 464.6, 475.3, 542.8, 579.9, 589.4, 616.4, 629.7, 641.0, 669.7, 685.5, 728.1, 746.6, 817.8, 841.7, 865.4, 867.5, 883.8, 917.2, 983.5, 1017.1, 1059.2, 1075.6, 1125.2, 1158.0, 1175.1, 1206.2, 1226.6, 1261.2, 1286.7, 1305.3, 1322.9, 1379.9, 1397.5, 1420.9, 1435.0, 1478.4, 1517.5, 1572.1, 2927.7, 3008.8, 3085.6, 3101.3, 3119.8
P1-c-3	0.6235 0.1259 0.1117	25.3, 33.3, 40.3, 76.2, 102.7, 115.5, 160.5, 164.3, 187.6, 196.0, 202.2, 205.7, 266.0, 282.0, 319.1, 334.5, 372.9, 375.6, 389.1, 425.0, 433.1, 500.5, 548.9, 568.4, 574.4, 589.3, 609.9, 638.5, 642.2, 687.8, 709.7, 734.5, 835.4, 851.4, 877.8, 897.8, 906.8, 919.0, 986.1, 1032.9, 1073.7, 1089.0, 1144.1, 1157.1, 1187.8, 1203.4, 1243.0, 1275.3, 1289.2, 1323.4, 1368.4, 1373.6, 1430.9, 1459.6, 1517.2, 1531.7, 1608.4, 1700.4, 2905.8, 2993.8, 3082.3, 3093.5, 3113.0,
TS1-d	0.6344 0.1343 0.1197	1665.9i , 37.4, 42.2, 65.6, 117.9, 144.8, 184.2, 192.7, 202.4, 215.5, 247.9, 254.2, 302.3, 317.9, 339.1, 348.4, 380.3, 417.7, 440.3, 451.6, 475.0, 495.7, 599.9, 604.3, 612.1, 620.9, 645.6, 658.1, 674.0, 700.6, 720.4, 752.4, 816.1, 832.9, 841.2, 844.5, 869.1, 903.8, 928.2, 958.6, 991.9, 1020.9, 1059.6, 1081.6, 1123.2, 1191.1, 1206.0, 1227.9, 1265.0, 1271.9, 1280.3, 1333.6, 1369.3, 1429.0, 1468.2, 1544.9, 1579.8, 1587.1, 1859.7, 3098.3, 3100.8, 3109.5, 3118.3
IM1-d	0.5342 0.1466 0.1306	21.2, 38.9, 57.7, 92.8, 139.4, 170.2, 191.3, 197.0, 207.8, 244.0, 254.1, 280.1, 286.1, 331.8, 335.4, 355.6, 409.6, 416.7, 425.2, 462.1, 493.1, 553.9, 585.2, 601.0, 613.7, 630.2, 644.4, 665.8, 676.1, 712.7, 742.7, 818.8, 819.9, 837.3, 861.3, 880.6, 895.8, 919.8, 956.9, 1013.5, 1034.1, 1084.6, 1098.9, 1148.6, 1191.4, 1202.5, 1219.0, 1230.8, 1239.8, 1277.3, 1286.6, 1317.5, 1361.2, 1424.0, 1449.0, 1558.3, 1570.4, 1589.1, 2915.0, 3087.7, 3095.3, 3117.8, 3137.3
TS1-d-1	0.4571 0.1636 0.1489	364.7i , 25.1, 39.5, 50.8, 83.9, 143.3, 172.9, 187.2, 193.7, 196.5, 218.4, 257.1, 266.9, 298.5, 326.9, 336.1, 352.7, 375.9, 418.3, 426.5, 455.2, 469.0, 534.6, 575.2, 598.0, 615.4, 623.2, 643.9, 658.1, 667.6, 684.2, 716.1, 736.4, 810.9, 814.1, 842.0, 865.0, 879.5, 907.6, 927.2, 964.4, 1022.0, 1067.5, 1084.2, 1151.8, 1178.2, 1199.9, 1224.5, 1279.4, 1280.8,

		1303.9, 1359.3, 1441.7, 1555.0, 1572.0, 1587.0, 1605.0, 1621.4, 2915.5, 3093.9, 3099.9, 3117.7, 3185.7
P1-d-1	0.4256 0.2008 0.1624	18.3, 29.5, 43.0, 53.6, 83.3, 103.3, 138.3, 159.1, 181.1, 195.4, 204.4, 215.7, 247.7, 291.7, 317.7, 336.6, 347.1, 371.5, 426.7, 450.9, 464.9, 496.2, 513.4, 586.5, 603.5, 618.7, 635.8, 646.4, 662.7, 678.2, 687.8, 705.7, 725.7, 770.2, 826.8, 839.5, 853.2, 883.2, 903.3, 925.5, 974.7, 1016.4, 1050.0, 1084.0, 1166.5, 1187.4, 1202.8, 1224.4, 1274.1, 1283.3, 1319.3, 1362.7, 1445.9, 1566.4, 1596.9, 1601.2, 1645.6, 1825.0, 2926.8, 3087.8, 3102.0, 3118.2, 3195.3
TS1-d-2	0.4601 0.1701 0.1528	322.7i , 34.0, 43.2, 54.0, 105.5, 158.9, 188.6, 194.2, 196.3, 200.5, 239.8, 256.9, 282.1, 287.0, 307.4, 340.1, 355.4, 412.7, 423.7, 434.6, 459.1, 496.6, 540.4, 564.4, 574.8, 608.0, 619.7, 658.3, 662.2, 674.7, 715.3, 741.6, 779.6, 832.1, 841.1, 854.7, 865.3, 888.0, 924.1, 932.2, 1015.0, 1046.0, 1060.0, 1088.5, 1147.6, 1204.6, 1225.5, 1238.6, 1266.7, 1303.9, 1323.3, 1356.4, 1418.4, 1453.2, 1512.4, 1534.9, 1572.0, 1578.3, 3004.7, 3072.9, 3094.0, 3103.5, 3117.5
P1-d-2	0.5133 0.1625 0.1506	19.8, 38.3, 44.8, 58.0, 103.1, 142.2, 160.3, 175.7, 187.6, 200.2, 222.9, 231.4, 260.0, 288.7, 331.3, 348.4, 371.6, 400.0, 443.8, 464.8, 487.6, 497.6, 516.6, 548.1, 589.9, 602.0, 625.7, 654.4, 665.3, 692.7, 724.5, 760.2, 773.1, 815.0, 850.6, 866.6, 878.8, 896.0, 913.4, 945.9, 976.6, 1099.5, 1109.2, 1134.2, 1174.9, 1209.3, 1227.0, 1237.9, 1278.5, 1310.5, 1324.9, 1413.8, 1438.2, 1452.1, 1520.1, 1559.1, 1614.1, 1779.6, 3048.1, 3065.0, 3089.8, 3096.5, 3106.9
TS1-d-3	0.5695 0.1408 0.1273	714.9i , 22.1, 37.3, 55.5, 97.3, 142.9, 169.8, 183.6, 195.5, 202.2, 234.4, 245.8, 275.7, 291.3, 317.8, 339.8, 376.6, 395.9, 424.6, 436.0, 456.9, 488.0, 552.5, 596.9, 603.6, 616.2, 629.7, 644.1, 648.0, 690.4, 718.6, 751.5, 817.3, 834.6, 842.1, 857.0, 874.0, 927.2, 950.2, 1013.2, 1032.4, 1082.7, 1110.2, 1161.3, 1170.6, 1173.9, 1211.8, 1241.7, 1246.5, 1261.3, 1300.2, 1322.7, 1373.7, 1431.2, 1483.0, 1505.5, 1552.3, 1581.9, 2939.9, 3084.4, 3092.7, 3118.9, 3123.1
P1-d-3	0.6651 0.1245 0.1224	14.8, 24.3, 38.4, 72.6, 92.8, 138.5, 151.9, 162.8, 194.0, 200.6, 204.0, 218.3, 282.1, 287.7, 335.6, 354.3, 369.0, 374.1, 420.8, 424.8, 473.6, 503.4, 545.1, 589.4, 607.4, 617.2, 620.3, 632.2, 643.7, 710.8, 725.5, 752.1, 811.5, 839.2, 843.9, 865.1, 876.9, 930.9, 968.2, 1022.6, 1057.6, 1082.3, 1119.9, 1163.6, 1191.6, 1204.4, 1219.3, 1225.9, 1256.2, 1300.0, 1320.4, 1384.8, 1435.9, 1454.8, 1527.0, 1539.3, 1605.8, 1674.4, 2892.4, 3089.2, 3089.7, 3109.6, 3112.6
TS1-e	0.6373 0.1323 0.1161	460.2i , 38.5, 42.4, 70.4, 97.6, 142.0, 179.9, 196.9, 199.3, 206.4, 234.5, 242.1, 277.6, 279.6, 308.5, 353.7, 370.5, 372.7, 400.7, 423.7, 442.9, 459.7, 491.7, 568.7, 581.8, 616.2, 628.1, 640.0, 640.3, 656.9, 690.3, 729.3, 751.9, 786.0, 837.1, 851.9, 864.2, 869.2, 922.8, 997.7, 1068.6, 1076.9, 1106.0, 1155.4, 1186.7, 1211.1, 1232.3, 1259.2, 1262.7, 1315.6, 1334.4, 1381.1, 1405.3, 1431.9, 1451.4, 1474.3, 1525.0, 1553.2, 3094.5, 3095.9, 3096.5, 3115.4, 3669.8

P1-e	0.6135 0.1270 0.1137	31.4, 35.1, 43.6, 93.8, 109.5, 158.1, 168.5, 173.1, 193.0, 202.5, 208.5, 233.7, 264.5, 278.1, 287.4, 350.8, 374.5, 382.1, 386.7, 428.5, 432.6, 458.6, 506.8, 554.3, 569.0, 606.7, 626.3, 638.7, 661.1, 673.8, 716.7, 728.2, 742.3, 824.5, 850.2, 870.7, 880.7, 888.0, 926.0, 1006.9, 1083.1, 1110.5, 1123.7, 1167.7, 1203.5, 1217.6, 1238.5, 1256.7, 1284.2, 1294.0, 1342.4, 1378.2, 1427.1, 1451.9, 1467.6, 1518.7, 1547.9, 1577.5, 3082.7, 3092.5, 3097.8, 3111.1, 3718.2,
RC2	0.6639 0.1255 0.1095	35.6, 46.0, 50.2, 55.5, 100.1, 106.3, 121.5, 126.5, 152.7, 187.9, 198.0, 240.5, 245.4, 251.6, 253.0, 337.3, 371.0, 378.3, 387.5, 420.7, 427.8, 438.1, 442.3, 472.3, 576.0, 604.1, 625.4, 629.8, 655.9, 687.0, 699.4, 707.7, 715.7, 789.6, 827.8, 841.8, 861.3, 866.2, 903.4, 911.2, 1019.9, 1074.7, 1077.1, 1153.6, 1180.2, 1203.0, 1208.1, 1238.6, 1278.7, 1293.7, 1357.3, 1375.2, 1420.4, 1437.4, 1542.3, 1557.3, 1567.7, 1609.7, 3103.8, 3104.9, 3119.9, 3136.5, 3616.7
TS2	0.6852 0.1255 0.1089	309.0i , 42.0, 49.5, 75.6, 90.2, 101.3, 128.6, 133.6, 146.9, 188.1, 198.4, 236.1, 244.8, 249.8, 251.9, 335.8, 367.9, 385.4, 387.6, 425.5, 429.1, 440.3, 475.5, 575.4, 610.2, 623.9, 631.6, 655.2, 686.6, 692.0, 708.4, 716.2, 741.2, 789.3, 839.7, 848.9, 863.8, 892.4, 900.5, 914.6, 1018.6, 1070.9, 1076.2, 1146.9, 1175.2, 1197.3, 1205.2, 1228.6, 1280.5, 1294.0, 1334.0, 1371.3, 1413.7, 1431.1, 1520.4, 1543.1, 1556.7, 1603.0, 3105.0, 3108.1, 3118.7, 3129.6, 3634.6
IM2	0.6910 0.1257 0.1075	38.6, 48.9, 68.9, 96.1, 118.9, 126.5, 149.9, 184.1, 196.0, 200.5, 236.3, 243.3, 252.4, 276.6, 330.8, 364.0, 375.9, 386.1, 422.2, 425.9, 465.8, 491.1, 561.6, 580.3, 620.5, 634.7, 644.4, 677.7, 681.8, 705.7, 731.8, 746.0, 789.9, 840.4, 861.4, 879.1, 891.3, 927.9, 993.3, 1032.1, 1073.5, 1120.7, 1146.3, 1165.9, 1178.5, 1202.3, 1218.2, 1265.0, 1283.8, 1301.5, 1331.1, 1352.5, 1372.1, 1424.4, 1478.4, 1518.5, 1553.4, 1598.8, 2881.6, 3104.7, 3117.9, 3121.6, 3704.1
TS2-a	0.6062 0.1272 0.1104	319.8i , 38.6, 41.7, 59.1, 95.2, 105.7, 127.8, 153.1, 179.2, 186.3, 198.1, 212.6, 240.6, 275.1, 285.8, 326.3, 344.6, 355.6, 396.0, 415.5, 423.2, 469.6, 478.4, 519.7, 548.4, 608.8, 618.8, 641.5, 672.4, 683.3, 700.1, 726.4, 762.3, 786.6, 824.0, 837.4, 844.5, 864.3, 898.4, 974.2, 1073.4, 1084.7, 1109.5, 1153.0, 1161.2, 1205.4, 1224.0, 1234.2, 1277.0, 1297.8, 1362.5, 1400.7, 1422.1, 1430.1, 1530.3, 1553.3, 1574.3, 1602.6, 3053.2, 3087.8, 3102.1, 3118.6, 3687.1
IM2-a	0.5849 0.1247 0.1068	22.0, 32.5, 48.4, 72.1, 83.3, 112.5, 136.8, 162.8, 176.2, 194.6, 198.2, 224.8, 249.8, 264.6, 283.2, 320.3, 341.3, 366.5, 382.7, 393.8, 420.5, 477.6, 484.2, 521.6, 545.8, 604.2, 616.9, 643.8, 658.9, 686.7, 707.5, 710.3, 741.2, 785.2, 813.5, 830.9, 833.6, 860.7, 896.7, 962.8, 1048.5, 1081.2, 1099.3, 1163.2, 1172.7, 1208.7, 1234.1, 1245.0, 1279.0, 1307.1, 1359.2, 1395.6, 1439.1, 1557.0, 1560.5, 1592.9, 1612.4, 1678.1, 3060.6, 3085.2, 3099.0, 3118.0, 3729.4,
TS2-a-1	0.5703	479.3i , 22.0, 34.9, 46.7, 80.2, 84.1, 116.6, 140.5, 161.2, 173.1, 193.4,

	0.1251 0.1077	198.4, 222.6, 249.8, 274.9, 289.7, 322.7, 359.3, 386.2, 394.5, 420.8, 475.9, 484.5, 520.0, 549.3, 607.7, 625.1, 645.1, 666.0, 688.0, 707.8, 716.4, 744.0, 789.4, 807.7, 833.4, 837.0, 861.4, 898.9, 968.6, 1058.8, 1081.5, 1096.7, 1129.5, 1170.0, 1192.1, 1209.3, 1237.0, 1276.7, 1302.4, 1357.5, 1393.5, 1437.1, 1542.5, 1559.2, 1590.5, 1592.6, 1654.1, 3052.3, 3061.3, 3098.2, 3118.3, 3565.8
P2-a-1	0.5729 0.1260 0.1076	30.2, 40.8, 44.2, 73.2, 92.7, 118.1, 141.5, 173.9, 193.6, 200.6, 202.1, 230.1, 235.6, 245.0, 298.1, 321.0, 357.1, 379.5, 398.6, 423.2, 467.7, 485.5, 523.8, 544.9, 604.8, 631.5, 645.5, 663.9, 691.9, 708.0, 728.6, 742.5, 761.5, 779.6, 840.2, 861.7, 870.7, 903.7, 961.0, 966.7, 1075.8, 1102.3, 1125.3, 1182.6, 1209.1, 1219.7, 1237.2, 1256.6, 1300.5, 1358.2, 1374.6, 1377.3, 1418.3, 1446.8, 1463.0, 1553.5, 1591.0, 1663.0, 2849.3, 3070.7, 3104.2, 3118.7, 3146.5
TS2-b	0.6175 0.1256 0.1116	228.8i , 27.7, 44.0, 47.6, 91.0, 113.6, 130.4, 148.1, 172.7, 194.2, 203.5, 245.2, 254.3, 275.8, 316.3, 323.3, 355.9, 367.8, 383.4, 419.8, 427.3, 448.3, 480.6, 521.3, 564.4, 587.8, 623.7, 637.6, 646.3, 700.5, 712.3, 731.5, 795.9, 836.8, 856.6, 857.8, 875.1, 889.2, 903.9, 1011.1, 1018.5, 1066.8, 1118.5, 1137.8, 1151.9, 1204.6, 1218.9, 1225.8, 1277.3, 1285.5, 1341.8, 1373.2, 1403.7, 1455.3, 1529.8, 1535.3, 1552.6, 1589.9, 3077.8, 3079.3, 3102.0, 3118.3, 3709.1
IM2-b	0.6074 0.1227 0.1098	20.1, 27.1, 44.4, 54.4, 95.3, 109.4, 127.2, 148.7, 167.7, 196.5, 208.8, 240.5, 250.8, 259.0, 302.2, 314.5, 333.0, 365.2, 380.7, 419.2, 422.6, 439.1, 502.2, 517.2, 555.5, 568.1, 619.5, 643.5, 654.8, 699.1, 704.7, 741.0, 794.0, 834.3, 855.6, 866.6, 873.6, 878.3, 904.8, 996.3, 1031.2, 1068.3, 1134.7, 1145.9, 1153.8, 1205.3, 1224.2, 1227.7, 1285.5, 1299.4, 1359.4, 1378.2, 1410.3, 1491.1, 1545.8, 1593.4, 1600.6, 1641.3, 3078.7, 3079.0, 3104.6, 3119.8, 3736.7
TS2-b-1	0.6161 0.1205 0.1062	561.1i , 18.1, 37.6, 49.7, 79.7, 109.0, 127.1, 132.7, 173.8, 193.2, 198.4, 242.2, 245.4, 272.5, 305.2, 317.6, 335.4, 368.3, 395.9, 415.0, 421.3, 438.4, 484.7, 522.7, 548.2, 589.4, 615.6, 640.7, 647.8, 699.3, 707.0, 731.9, 794.0, 838.1, 858.1, 863.2, 883.7, 890.8, 898.6, 969.7, 975.5, 1068.6, 1115.9, 1129.6, 1163.7, 1201.5, 1214.5, 1266.6, 1279.6, 1335.9, 1366.5, 1381.2, 1401.6, 1450.9, 1543.7, 1563.0, 1585.6, 1587.7, 3076.8, 3087.2, 3106.0, 3120.7, 3411.7
P2-b-1	0.6690 0.1188 0.1062	18.6, 35.5, 41.9, 69.6, 100.0, 118.8, 137.8, 164.1, 185.4, 198.4, 210.9, 227.6, 246.3, 285.8, 315.8, 326.2, 361.1, 375.6, 381.1, 420.3, 423.0, 488.5, 529.6, 545.7, 577.6, 623.9, 639.3, 651.1, 693.9, 714.4, 759.4, 777.5, 803.1, 812.6, 841.0, 861.1, 898.0, 912.5, 953.8, 985.5, 1058.7, 1075.3, 1134.5, 1155.2, 1195.2, 1208.7, 1243.9, 1266.6, 1290.5, 1330.1, 1374.0, 1382.3, 1427.0, 1452.3, 1482.6, 1558.2, 1597.7, 1659.5, 2857.8, 3069.6, 3104.4, 3120.1, 3182.2
TS2-b-2	0.6362 0.1255	306.1i , 16.0, 43.6, 72.9, 110.0, 113.3, 123.8, 125.6, 156.5, 176.2, 196.3, 242.5, 256.7, 261.3, 312.6, 325.6, 344.7, 370.9, 376.5, 413.7, 420.2,

	0.1141	434.4, 447.1, 512.6, 554.2, 595.3, 626.1, 642.0, 651.6, 700.4, 711.2, 749.2, 768.1, 793.8, 837.0, 855.3, 864.3, 875.1, 897.3, 981.2, 1016.4, 1065.8, 1111.7, 1139.8, 1159.7, 1206.1, 1221.2, 1227.8, 1287.3, 1304.2, 1338.2, 1385.9, 1413.4, 1483.2, 1527.0, 1541.7, 1588.3, 1592.8, 3087.3, 3103.3, 3107.2, 3117.0, 3721.2
P2-b-2	0.6802 0.1218 0.1075	30.2, 46.3, 50.8, 93.9, 104.5, 120.5, 135.4, 179.3, 195.8, 221.8, 227.0, 255.8, 299.1, 331.0, 342.7, 357.6, 367.5, 386.0, 419.0, 427.1, 447.4, 468.9, 534.6, 570.7, 604.9, 620.3, 634.5, 651.2, 666.8, 683.6, 705.0, 734.8, 749.6, 769.8, 836.9, 862.6, 879.3, 926.2, 994.2, 1029.5, 1069.2, 1087.8, 1118.3, 1152.4, 1194.4, 1204.1, 1224.6, 1245.2, 1260.4, 1292.9, 1328.7, 1371.2, 1396.2, 1415.6, 1491.3, 1548.8, 1555.9, 1601.4, 2998.0, 3109.2, 3120.0, 3153.0, 3688.7
TS2-c	0.6816 0.1258 0.1097	1761.7i , 38.2, 46.4, 84.4, 99.9, 119.2, 156.0, 177.2, 189.2, 212.1, 241.3, 250.7, 269.7, 287.0, 330.1, 376.6, 386.8, 403.0, 422.7, 450.2, 475.6, 510.5, 570.4, 576.6, 623.1, 642.3, 665.3, 679.6, 713.3, 738.9, 766.1, 787.7, 840.8, 857.2, 860.4, 869.2, 886.1, 898.1, 960.1, 981.2, 1031.5, 1073.3, 1117.0, 1148.0, 1168.9, 1186.1, 1208.0, 1231.2, 1260.5, 1286.0, 1329.9, 1356.6, 1394.1, 1428.8, 1494.2, 1549.8, 1578.8, 1599.0, 1891.3, 2982.2, 3100.0, 3104.4, 3118.2
IM2-c	0.6195 0.1352 0.1203	38.5, 46.7, 75.2, 102.7, 116.3, 140.1, 154.5, 176.0, 197.8, 228.6, 253.9, 262.6, 285.4, 333.1, 355.7, 377.0, 387.6, 419.9, 431.3, 435.5, 506.2, 548.1, 558.3, 618.4, 642.8, 659.0, 668.4, 690.2, 713.0, 743.7, 780.5, 821.9, 841.3, 860.1, 863.1, 899.2, 926.2, 984.5, 1035.0, 1053.9, 1071.6, 1133.3, 1144.1, 1171.0, 1187.3, 1208.9, 1234.1, 1249.3, 1269.7, 1286.8, 1337.3, 1354.6, 1403.3, 1423.7, 1460.9, 1541.5, 1574.2, 1588.3, 2921.8, 3035.2, 3103.3, 3106.6, 3119.9
TS2-c-1	0.5745 0.1370 0.1221	408.3i , 33.4, 43.1, 63.1, 96.7, 111.8, 134.3, 148.6, 164.6, 195.3, 235.7, 247.8, 267.7, 279.1, 311.1, 333.3, 362.6, 400.1, 417.3, 422.8, 461.0, 485.8, 525.5, 554.1, 620.1, 631.3, 658.4, 674.2, 712.3, 725.1, 756.9, 773.5, 809.0, 840.7, 859.2, 871.8, 887.3, 898.2, 953.3, 971.5, 1052.5, 1072.0, 1121.0, 1155.5, 1201.8, 1223.0, 1230.8, 1268.8, 1289.7, 1309.9, 1342.5, 1381.1, 1410.7, 1427.7, 1524.1, 1548.8, 1588.0, 1596.4, 2873.1, 3087.5, 3094.6, 3104.1, 3118.5
P2-c-1	0.5155 0.1428 0.1238	34.0, 37.9, 54.9, 82.2, 95.6, 128.4, 135.2, 157.3, 182.0, 192.2, 197.4, 219.7, 234.8, 256.8, 299.0, 316.7, 354.0, 360.2, 372.6, 417.7, 424.7, 449.6, 505.1, 541.0, 605.8, 630.7, 651.5, 685.2, 714.9, 731.1, 733.4, 752.7, 759.1, 796.7, 814.4, 842.6, 864.5, 899.2, 961.5, 968.3, 1048.2, 1077.2, 1129.2, 1161.0, 1206.3, 1231.6, 1251.1, 1276.0, 1298.8, 1360.9, 1376.9, 1378.5, 1419.6, 1446.5, 1461.7, 1553.8, 1591.8, 1669.3, 2847.6, 3059.1, 3104.8, 3120.2, 3133.7
TS2-c-2	0.5781 0.1309 0.1159	429.1i , 25.9, 36.1, 41.5, 59.4, 90.5, 108.2, 124.7, 161.6, 170.7, 198.2, 222.3, 256.0, 278.3, 308.3, 323.3, 331.4, 376.7, 383.9, 390.5, 419.0, 449.3, 501.3, 530.5, 552.4, 589.7, 630.4, 648.0, 690.6, 715.7, 734.9, 773.9, 782.3, 829.2, 842.9, 861.5, 882.4, 899.5, 930.2, 981.2, 1019.2,

		1060.4, 1092.7, 1124.2, 1185.5, 1194.9, 1209.2, 1259.2, 1274.3, 1299.0, 1335.9, 1368.7, 1388.7, 1430.4, 1537.3, 1555.7, 1576.5, 1684.2, 2876.4, 3000.7, 3081.6, 3103.6, 3120.4
P2-c-2	0.5709 0.1324 0.1165	13.3, 39.0, 48.2, 54.4, 68.6, 96.7, 112.8, 127.0, 158.3, 178.1, 198.0, 245.7, 253.2, 270.8, 301.8, 322.1, 361.3, 367.9, 384.2, 417.8, 432.2, 484.2, 536.3, 543.4, 559.7, 622.7, 644.7, 662.4, 705.9, 722.6, 743.8, 772.5, 801.8, 837.1, 856.3, 873.3, 893.5, 926.3, 967.1, 1018.3, 1044.1, 1068.6, 1137.1, 1165.6, 1189.8, 1205.4, 1224.2, 1266.5, 1284.5, 1322.5, 1350.0, 1373.8, 1411.3, 1494.5, 1547.6, 1594.4, 1615.6, 1757.5, 2850.8, 3000.0, 3080.6, 3105.1, 3120.9
TS2-d	0.6868 0.1266 0.1095	1630.1i , 39.9, 48.0, 81.6, 101.0, 118.1, 165.4, 183.2, 193.8, 206.5, 232.9, 239.1, 254.7, 312.0, 333.1, 348.6, 381.5, 404.9, 426.6, 433.0, 486.9, 504.0, 567.1, 601.2, 619.7, 643.1, 661.3, 675.6, 684.2, 721.7, 752.5, 809.7, 840.2, 847.3, 861.5, 869.1, 893.6, 900.9, 986.5, 1017.6, 1060.0, 1074.2, 1090.4, 1127.8, 1149.7, 1174.8, 1206.5, 1226.5, 1264.6, 1273.6, 1301.7, 1339.7, 1384.4, 1427.5, 1465.3, 1546.3, 1582.4, 1593.3, 1858.5, 2976.7, 3102.8, 3104.4, 3118.8
IM2-d	0.6705 0.1287 0.1090	39.1, 44.3, 75.5, 88.0, 125.6, 154.7, 178.9, 195.4, 206.0, 221.4, 235.8, 252.8, 270.5, 333.1, 336.0, 359.6, 383.1, 401.2, 428.2, 431.5, 492.3, 542.1, 567.3, 605.8, 624.7, 647.6, 656.5, 676.8, 700.5, 726.9, 774.8, 824.4, 838.9, 846.3, 866.4, 868.0, 926.5, 989.3, 1025.6, 1043.0, 1074.5, 1083.4, 1110.4, 1120.2, 1158.4, 1178.9, 1203.6, 1212.6, 1246.3, 1269.9, 1291.2, 1312.9, 1385.8, 1432.2, 1492.9, 1544.9, 1585.9, 1607.3, 2754.8, 2945.7, 3099.2, 3103.2, 3119.0
TS2-d-1	0.6614 0.1288 0.1104	427.3i , 39.0, 48.1, 68.0, 84.0, 134.0, 149.2, 187.1, 196.6, 204.1, 225.7, 244.5, 274.7, 310.9, 324.1, 348.0, 364.4, 384.0, 404.7, 426.8, 443.4, 508.5, 546.2, 567.7, 605.8, 631.8, 642.6, 667.0, 672.8, 711.8, 744.7, 787.9, 816.9, 835.6, 841.6, 866.2, 912.8, 937.2, 1001.1, 1031.1, 1044.7, 1078.9, 1087.5, 1114.4, 1149.8, 1198.2, 1210.8, 1269.5, 1277.5, 1281.6, 1333.7, 1378.0, 1419.4, 1429.5, 1449.8, 1532.8, 1554.5, 1587.8, 2750.0, 3059.6, 3097.8, 3104.8, 3120.8
P2-d-1	0.6321 0.1177 0.1048	20.9, 39.7, 40.8, 65.4, 82.0, 114.8, 129.5, 181.2, 198.9, 201.7, 219.6, 223.8, 244.3, 303.5, 318.4, 334.4, 362.9, 373.4, 392.9, 411.3, 422.2, 506.5, 546.5, 577.9, 596.0, 634.1, 647.2, 651.4, 674.5, 723.0, 759.5, 775.7, 785.7, 804.7, 845.0, 857.9, 863.8, 909.0, 958.9, 1045.7, 1074.2, 1092.1, 1126.6, 1153.3, 1177.2, 1208.9, 1244.2, 1260.8, 1288.9, 1297.9, 1375.3, 1378.5, 1425.2, 1444.4, 1483.6, 1556.4, 1596.4, 1661.3, 2876.4, 3072.2, 3104.4, 3120.2, 3171.1
TS2-d-2	0.6192 0.1295 0.1083	323.4i , 39.0, 40.8, 62.8, 79.6, 107.2, 128.9, 152.3, 168.9, 195.2, 206.9, 218.0, 248.9, 255.3, 304.3, 316.6, 355.2, 368.0, 402.6, 426.5, 463.0, 490.3, 528.9, 547.6, 557.8, 616.7, 631.6, 650.1, 663.5, 706.0, 725.2, 769.2, 831.4, 838.2, 851.3, 865.8, 892.0, 928.7, 953.9, 972.4, 1026.6, 1080.8, 1118.5, 1169.7, 1197.5, 1207.1, 1226.0, 1272.9, 1286.8, 1324.2, 1325.9, 1392.1, 1426.9, 1476.6, 1541.3, 1569.8, 1583.0, 1599.5, 2825.9,

		2970.7, 3095.2, 3101.5, 3119.4
P2-d-2	0.5937 0.1259 0.1073	20.8, 36.7, 45.6, 63.8, 81.1, 89.6, 109.5, 143.7, 171.5, 179.5, 196.5, 200.4, 224.2, 260.0, 290.6, 332.3, 354.5, 367.7, 394.9, 422.0, 470.5, 497.6, 508.8, 531.8, 554.6, 618.9, 625.1, 654.8, 664.7, 705.4, 720.9, 774.9, 819.6, 836.7, 853.5, 865.1, 880.6, 956.3, 985.5, 1010.6, 1021.0, 1082.8, 1097.8, 1145.0, 1207.4, 1212.2, 1215.2, 1257.7, 1276.7, 1318.0, 1349.9, 1378.5, 1437.3, 1553.9, 1571.5, 1589.9, 1617.9, 1750.5, 2828.4, 2973.9, 3078.2, 3101.6, 3118.6
RC3	0.6846 0.1273 0.1113	37.7, 43.7, 49.2, 57.3, 98.3, 102.7, 113.1, 134.6, 145.6, 188.1, 198.2, 243.4, 246.1, 251.8, 252.5, 337.4, 371.1, 381.0, 387.4, 426.2, 430.6, 438.6, 453.0, 472.2, 576.3, 607.0, 621.5, 629.8, 655.7, 686.6, 692.9, 706.4, 715.7, 787.0, 834.7, 839.5, 857.9, 864.0, 902.1, 911.1, 1019.9, 1074.8, 1076.7, 1154.9, 1174.5, 1203.0, 1207.7, 1237.0, 1275.8, 1297.8, 1356.7, 1374.0, 1420.9, 1440.4, 1541.2, 1556.7, 1566.1, 1605.5, 3110.4, 3118.3, 3119.9, 3127.8, 3620.3
TS3	0.7304 0.1223 0.1083	343.7i , 41.8, 48.5, 85.9, 100.1, 118.3, 123.9, 144.3, 176.8, 188.9, 200.6, 228.1, 240.4, 248.9, 273.0, 339.5, 360.5, 373.6, 387.7, 412.7, 427.6, 440.0, 473.4, 575.9, 577.0, 619.1, 626.4, 651.2, 686.0, 690.3, 709.5, 711.7, 716.6, 784.1, 834.9, 840.0, 860.3, 865.7, 903.2, 913.1, 1021.3, 1047.9, 1075.8, 1152.0, 1173.0, 1200.9, 1204.3, 1227.5, 1274.1, 1281.8, 1345.1, 1381.0, 1415.3, 1429.3, 1497.8, 1549.6, 1566.8, 1597.0, 3104.2, 3105.2, 3118.7, 3129.0, 3635.3
P3	0.5552 0.1327 0.1123	33.1, 43.3, 57.0, 60.6, 103.9, 123.4, 130.1, 162.9, 194.9, 223.5, 242.8, 262.2, 286.6, 293.1, 347.7, 362.7, 384.0, 399.2, 421.4, 429.7, 446.5, 475.0, 523.8, 592.7, 621.2, 648.3, 656.2, 671.8, 690.5, 704.6, 708.0, 750.3, 787.2, 838.6, 841.0, 861.1, 872.6, 907.7, 976.1, 1027.0, 1075.3, 1133.6, 1145.0, 1162.6, 1194.3, 1214.0, 1239.9, 1280.3, 1290.8, 1351.2, 1370.6, 1389.9, 1425.2, 1446.9, 1534.2, 1546.6, 1553.0, 1598.3, 3103.7, 3104.8, 3119.2, 3127.5, 3604.5
RC4	0.6846 0.1273 0.1113	37.8, 43.6, 49.2, 57.3, 98.0, 102.5, 111.9, 134.8, 145.8, 188.1, 198.2, 243.4, 246.1, 251.8, 252.5, 337.4, 370.8, 381.2, 387.4, 426.2, 429.6, 438.6, 453.1, 472.2, 576.3, 606.4, 622.1, 629.8, 655.7, 686.7, 692.9, 706.6, 715.7, 787.0, 834.6, 839.5, 857.9, 864.0, 902.1, 911.1, 1019.8, 1074.8, 1076.7, 1154.9, 1174.5, 1203.0, 1207.7, 1237.0, 1275.8, 1297.8, 1356.7, 1374.0, 1420.9, 1440.4, 1541.1, 1556.7, 1566.0, 1605.4, 3110.3, 3118.3, 3119.9, 3127.7, 3619.6
TS4	0.7312 0.1234 0.1091	401.5i , 42.2, 46.9, 84.2, 98.7, 103.9, 129.1, 138.5, 178.6, 186.8, 198.3, 224.7, 251.7, 254.3, 261.7, 332.2, 349.0, 381.5, 388.1, 411.1, 427.6, 440.2, 471.9, 574.7, 585.8, 619.0, 623.2, 649.2, 683.5, 693.9, 705.9, 714.1, 759.2, 787.6, 833.8, 838.9, 854.8, 863.5, 901.7, 910.5, 1018.5, 1043.8, 1075.5, 1151.2, 1168.5, 1197.5, 1207.7, 1243.7, 1266.6, 1284.6, 1347.0, 1373.7, 1412.1, 1440.6, 1507.6, 1554.1, 1562.8, 1605.6, 3104.7, 3107.1, 3118.0, 3118.7, 3644.0

P4	0.6054 0.1358 0.1160	35.4, 42.5, 58.0, 64.1, 110.3, 131.4, 136.2, 153.8, 193.1, 221.5, 253.6, 257.9, 273.0, 281.9, 368.2, 375.2, 389.9, 409.1, 425.5, 436.2, 454.0, 461.5, 515.8, 591.7, 618.3, 640.4, 651.6, 670.8, 696.0, 706.1, 711.6, 747.3, 803.3, 838.1, 852.4, 862.5, 872.2, 905.2, 949.4, 1029.2, 1074.7, 1133.3, 1149.6, 1172.6, 1204.7, 1213.5, 1221.9, 1271.0, 1283.2, 1357.1, 1369.2, 1384.0, 1430.0, 1454.3, 1513.4, 1548.6, 1550.6, 1596.3, 3109.8, 3116.2, 3117.4, 3119.4, 3595.3
RC5	0.6848 0.1273 0.1113	38.3, 43.6, 48.9, 57.3, 97.6, 102.6, 109.1, 134.6, 145.6, 188.0, 198.2, 243.2, 246.0, 251.8, 252.6, 337.4, 370.8, 381.5, 387.1, 426.2, 429.6, 438.6, 452.9, 472.1, 576.2, 606.3, 622.0, 629.8, 655.7, 686.6, 692.8, 706.7, 715.6, 787.0, 834.6, 839.5, 857.9, 864.0, 902.0, 911.1, 1019.8, 1074.8, 1076.7, 1154.9, 1174.5, 1203.0, 1207.6, 1237.3, 1276.2, 1299.5, 1356.7, 1373.8, 1420.9, 1440.3, 1541.2, 1556.9, 1565.2, 1605.4, 3110.3, 3118.3, 3119.9, 3127.8, 3620.4
TS5	0.6988 0.1277 0.1111	218.1i , 40.6, 49.8, 74.2, 78.8, 100.0, 115.9, 126.2, 138.8, 188.4, 198.7, 233.3, 245.9, 251.8, 253.9, 336.4, 373.9, 380.7, 387.8, 426.3, 437.6, 443.5, 473.8, 576.2, 615.1, 622.7, 628.5, 649.9, 674.3, 686.4, 697.3, 713.7, 718.3, 786.2, 837.8, 843.3, 864.8, 898.0, 905.5, 914.9, 1020.3, 1072.1, 1075.2, 1149.9, 1169.7, 1196.3, 1205.3, 1228.9, 1273.2, 1297.3, 1336.1, 1370.4, 1416.8, 1437.3, 1523.6, 1547.0, 1553.7, 1598.8, 3111.5, 3119.0, 3119.7, 3132.8, 3639.9
IM5	0.7195 0.1280 0.1098	34.8, 50.9, 65.2, 92.5, 128.6, 142.1, 187.1, 197.0, 201.6, 236.7, 243.5, 254.5, 266.0, 316.3, 345.9, 368.0, 377.6, 389.9, 424.6, 431.9, 462.4, 493.5, 560.4, 589.3, 615.4, 634.6, 639.7, 673.7, 692.5, 710.3, 714.9, 737.8, 777.0, 836.7, 859.2, 869.7, 902.7, 948.3, 1004.8, 1028.8, 1071.6, 1103.4, 1142.4, 1169.1, 1190.9, 1195.8, 1207.4, 1252.5, 1283.7, 1317.2, 1331.1, 1356.5, 1397.1, 1419.9, 1463.5, 1509.0, 1543.5, 1582.0, 2923.1, 3112.0, 3117.9, 3131.0, 3676.9
TS5-a	0.6739 0.1209 0.1097	305.2i , 32.7, 39.9, 50.7, 99.7, 120.4, 125.8, 157.5, 168.5, 193.8, 203.5, 243.7, 252.2, 280.5, 313.5, 326.1, 377.2, 389.9, 409.3, 423.1, 433.4, 466.8, 481.6, 522.8, 560.8, 625.1, 629.2, 639.9, 661.5, 702.2, 713.5, 717.7, 836.2, 840.8, 858.9, 870.6, 878.7, 895.2, 928.8, 962.0, 1020.4, 1071.6, 1115.5, 1143.9, 1169.5, 1203.0, 1223.6, 1247.8, 1280.6, 1294.7, 1339.2, 1379.2, 1406.8, 1473.3, 1496.4, 1527.1, 1534.8, 1579.2, 3095.8, 3108.5, 3112.6, 3118.8, 3646.4
IM5-a	0.6598 0.1137 0.1039	25.8, 28.2, 39.7, 52.4, 110.5, 118.3, 122.1, 158.5, 167.9, 194.2, 231.9, 250.3, 254.2, 272.8, 300.1, 319.0, 375.0, 385.7, 411.6, 419.8, 437.5, 476.3, 514.7, 525.6, 559.2, 608.2, 627.4, 639.7, 684.6, 699.2, 709.8, 718.3, 838.6, 854.2, 856.9, 866.4, 875.4, 906.4, 936.2, 953.3, 1012.0, 1072.3, 1102.7, 1140.2, 1173.7, 1204.6, 1229.3, 1253.2, 1285.0, 1311.1, 1358.5, 1381.3, 1408.3, 1530.4, 1537.1, 1581.3, 1584.2, 1606.6, 3089.8, 3111.4, 3113.0, 3115.2, 3641.3
TS5-a-1	0.7116	361.9i , 26.5, 35.5, 51.8, 89.2, 118.7, 132.2, 153.4, 185.7, 195.6, 202.7,

	0.1086 0.0980	240.1, 258.0, 277.0, 293.8, 324.0, 355.2, 381.6, 394.9, 412.7, 422.4, 444.9, 485.3, 524.5, 588.8, 615.8, 629.7, 639.7, 675.7, 699.9, 709.6, 716.3, 839.9, 845.3, 857.2, 861.7, 876.9, 896.7, 923.3, 948.8, 1001.6, 1070.5, 1083.2, 1167.3, 1178.5, 1202.7, 1220.9, 1269.6, 1280.4, 1334.8, 1372.9, 1379.3, 1407.5, 1484.2, 1534.4, 1542.7, 1579.8, 1583.8, 3076.4, 3090.0, 3111.2, 3113.7, 3190.9
P5-a-1	0.7322 0.1079 0.0991	25.4, 32.7, 40.1, 74.1, 104.4, 111.5, 144.4, 160.2, 187.9, 198.5, 211.7, 230.4, 250.9, 281.0, 291.3, 332.2, 361.6, 375.5, 392.0, 421.5, 426.0, 490.2, 530.3, 547.3, 607.4, 623.7, 635.9, 671.9, 710.6, 712.3, 721.0, 777.6, 797.8, 840.6, 846.1, 858.8, 890.2, 927.0, 942.9, 960.4, 992.4, 1072.9, 1132.8, 1139.6, 1178.0, 1203.9, 1215.6, 1259.3, 1289.1, 1346.8, 1377.9, 1399.9, 1417.5, 1427.6, 1481.3, 1543.0, 1575.9, 1673.7, 2855.7, 3082.0, 3107.6, 3119.2, 3166.2
TS5-a-2	0.6486 0.1290 0.1174	317.4i , 26.9, 38.3, 70.0, 103.5, 115.7, 129.5, 147.1, 156.2, 177.1, 195.7, 244.2, 266.8, 275.4, 297.1, 308.9, 348.2, 374.4, 404.1, 420.2, 426.1, 443.9, 500.9, 513.3, 549.6, 621.9, 634.3, 637.8, 673.7, 694.7, 706.4, 718.8, 800.0, 837.2, 845.8, 856.8, 861.7, 874.9, 925.0, 950.0, 996.9, 1070.5, 1123.4, 1151.7, 1166.6, 1201.5, 1214.5, 1262.9, 1281.6, 1310.8, 1334.4, 1374.8, 1404.8, 1490.1, 1519.7, 1535.4, 1574.3, 1581.5, 3108.5, 3111.9, 3118.1, 3125.6, 3624.6
P5-a-2	0.5726 0.1436 0.1200	33.5, 41.8, 53.0, 88.9, 102.2, 128.7, 153.8, 182.9, 193.7, 228.4, 233.9, 249.1, 289.6, 322.4, 347.2, 359.2, 378.6, 413.8, 424.1, 437.7, 445.2, 461.2, 563.6, 585.6, 608.5, 628.0, 636.9, 666.7, 681.3, 699.5, 704.3, 723.4, 727.3, 796.4, 836.5, 860.4, 862.8, 898.7, 993.0, 1048.9, 1072.1, 1073.9, 1112.9, 1158.4, 1190.5, 1205.9, 1221.2, 1242.8, 1288.5, 1301.4, 1357.8, 1381.7, 1395.0, 1417.9, 1437.5, 1541.3, 1582.3, 1596.1, 3054.6, 3108.7, 3118.5, 3168.3, 3659.7
TS5-b	0.6529 0.1193 0.1025	94.6i , 31.7, 36.9, 57.1, 108.0, 109.5, 127.8, 155.4, 166.4, 192.0, 196.1, 221.6, 261.4, 271.7, 288.6, 337.5, 361.3, 376.4, 397.6, 422.1, 454.1, 481.2, 511.4, 515.4, 545.8, 613.9, 628.7, 633.3, 643.5, 673.2, 693.6, 718.2, 741.5, 775.6, 807.0, 829.0, 831.7, 848.2, 914.1, 987.2, 1068.4, 1089.0, 1121.2, 1129.4, 1166.7, 1208.0, 1227.0, 1265.7, 1287.3, 1332.3, 1366.2, 1381.1, 1433.8, 1470.0, 1546.7, 1552.6, 1574.3, 1597.8, 3098.8, 3099.1, 3118.1, 3141.5, 3686.2
IM5-b	0.6684 0.1137 0.0978	18.3, 25.2, 53.3, 60.7, 102.9, 123.8, 136.0, 148.6, 155.1, 183.6, 191.6, 218.5, 226.4, 255.3, 270.3, 321.3, 363.5, 387.0, 394.7, 423.4, 453.2, 490.2, 493.0, 504.1, 555.9, 609.0, 625.1, 636.6, 642.3, 683.1, 695.8, 708.9, 765.9, 778.6, 812.4, 817.9, 844.1, 861.6, 915.2, 977.0, 1066.7, 1088.9, 1109.9, 1124.9, 1166.8, 1213.1, 1232.4, 1268.4, 1291.5, 1335.2, 1366.0, 1377.1, 1442.8, 1546.4, 1557.1, 1590.2, 1608.8, 1623.1, 3069.7, 3089.9, 3090.6, 3118.1, 3694.9
TS5-b-1	0.5739 0.1443 0.1280	304.3i , 36.4, 49.6, 69.6, 81.7, 112.5, 134.1, 142.9, 181.5, 184.7, 198.3, 210.3, 238.7, 274.1, 292.3, 304.0, 360.3, 370.9, 397.8, 431.8, 465.3, 481.3, 508.8, 517.6, 545.2, 600.1, 617.9, 632.6, 644.2, 673.2, 697.7,

		731.7, 754.6, 793.6, 817.8, 822.3, 846.0, 872.0, 905.4, 973.5, 1050.9, 1071.9, 1084.9, 1124.2, 1165.0, 1185.2, 1210.7, 1262.4, 1279.0, 1293.0, 1334.3, 1362.5, 1429.5, 1480.1, 1494.4, 1549.2, 1584.4, 1641.2, 3088.1, 3115.1, 3117.6, 3122.0, 3620.9
P5-b-1	0.5680 0.1605 0.1430	39.2, 52.4, 73.1, 76.4, 101.6, 144.3, 161.5, 179.7, 193.1, 194.9, 218.3, 230.5, 282.3, 288.0, 325.1, 353.3, 379.3, 407.3, 428.9, 443.4, 450.8, 494.1, 507.9, 576.3, 610.5, 623.1, 629.0, 645.4, 651.9, 698.0, 705.4, 745.0, 770.0, 811.9, 849.5, 883.8, 889.6, 920.2, 972.3, 995.6, 1051.6, 1069.6, 1083.8, 1120.5, 1157.9, 1181.9, 1204.6, 1212.4, 1243.3, 1270.1, 1284.0, 1347.5, 1357.3, 1431.8, 1507.4, 1549.8, 1584.1, 1638.4, 3089.5, 3095.9, 3119.4, 3144.3, 3638.7
TS5-c	0.7033 0.1285 0.1118	1508.5i , 37.9, 50.3, 79.8, 96.4, 125.9, 162.4, 183.4, 194.7, 207.4, 228.5, 238.1, 268.4, 291.8, 337.0, 369.1, 383.5, 407.1, 426.0, 429.2, 485.4, 495.9, 569.2, 601.8, 614.8, 639.8, 657.8, 673.9, 699.4, 703.1, 729.4, 813.5, 820.4, 846.0, 872.7, 878.3, 897.5, 902.6, 951.2, 1018.2, 1044.0, 1075.5, 1091.6, 1127.3, 1144.4, 1188.1, 1203.2, 1215.2, 1262.2, 1272.5, 1311.2, 1353.2, 1379.5, 1432.9, 1469.2, 1552.2, 1581.3, 1613.9, 1887.2, 2956.2, 3106.2, 3118.7, 3121.8
IM5-c	0.7165 0.1302 0.1111	38.4, 46.7, 75.8, 87.0, 135.6, 152.9, 180.9, 194.8, 208.8, 220.3, 240.4, 255.5, 278.8, 318.5, 355.6, 363.5, 378.1, 416.0, 423.2, 431.9, 484.5, 545.7, 560.8, 609.1, 621.4, 643.3, 659.9, 673.8, 695.3, 722.9, 761.6, 823.5, 838.7, 841.0, 853.2, 884.2, 902.4, 935.1, 1031.5, 1072.2, 1079.4, 1091.8, 1120.4, 1128.5, 1186.5, 1190.4, 1195.7, 1202.9, 1215.3, 1237.8, 1277.7, 1316.1, 1369.3, 1434.2, 1491.2, 1557.9, 1583.8, 1631.2, 2744.3, 2936.2, 3114.2, 3115.9, 3120.1
TS5-c-1	0.7142 0.1294 0.1113	406.4i , 40.3, 48.8, 68.1, 87.8, 136.7, 160.6, 184.2, 197.7, 206.0, 224.9, 250.2, 263.3, 300.1, 312.7, 362.3, 373.8, 393.5, 413.7, 433.2, 440.6, 509.0, 544.4, 583.3, 619.4, 635.7, 647.8, 661.7, 693.0, 704.2, 724.1, 808.9, 826.1, 837.4, 843.0, 876.7, 897.2, 928.5, 1005.1, 1013.8, 1068.9, 1076.6, 1094.9, 1131.6, 1185.3, 1190.1, 1213.0, 1216.4, 1268.6, 1277.6, 1311.0, 1368.2, 1380.0, 1425.2, 1457.8, 1543.5, 1560.6, 1601.4, 2745.4, 3030.6, 3113.4, 3114.7, 3119.5
P5-c-1	0.6721 0.1088 0.0982	27.1, 32.7, 41.3, 68.3, 94.0, 113.0, 130.1, 182.9, 199.5, 202.9, 221.8, 225.6, 257.5, 293.7, 307.7, 338.1, 365.6, 376.9, 386.6, 414.7, 425.9, 503.4, 548.8, 599.2, 619.4, 623.8, 645.5, 654.1, 705.0, 710.4, 714.5, 773.3, 786.7, 836.8, 839.4, 847.0, 859.1, 924.6, 945.1, 964.9, 1070.3, 1079.3, 1127.6, 1141.9, 1163.2, 1202.0, 1213.8, 1254.9, 1288.2, 1327.8, 1372.5, 1396.2, 1417.4, 1421.1, 1472.1, 1543.8, 1575.7, 1678.7, 2877.0, 3085.7, 3108.0, 3118.9, 3155.9
TS5-c-2	0.6944 0.1266 0.1083	379.2i , 34.7, 46.2, 64.5, 79.1, 118.9, 132.8, 151.6, 168.7, 194.4, 207.1, 220.9, 239.9, 252.3, 300.2, 326.9, 361.9, 373.5, 418.8, 433.1, 454.3, 490.0, 538.7, 548.1, 550.6, 617.8, 632.7, 652.5, 683.8, 693.9, 717.5, 782.1, 830.4, 831.2, 842.8, 877.2, 886.1, 919.7, 943.2, 984.1, 1077.9,

		1089.3, 1125.2, 1178.5, 1182.6, 1196.9, 1203.8, 1216.0, 1278.1, 1313.4, 1327.0, 1366.7, 1434.7, 1488.0, 1555.9, 1564.8, 1587.0, 1622.6, 2822.3, 2943.6, 3108.0, 3115.4, 3119.3
P5-c-2	0.6760 0.1183 0.1033	9.0, 29.5, 47.0, 55.6, 62.0, 104.0, 118.3, 137.5, 160.3, 173.9, 188.5, 200.8, 217.4, 262.9, 266.6, 307.5, 352.3, 382.1, 404.4, 430.8, 451.8, 494.8, 514.9, 539.6, 562.5, 614.9, 627.1, 674.8, 676.6, 696.1, 709.8, 793.4, 817.1, 838.4, 842.1, 876.5, 885.4, 920.7, 979.1, 1000.9, 1077.9, 1081.8, 1113.9, 1144.5, 1178.6, 1202.2, 1216.1, 1222.4, 1280.3, 1318.0, 1348.7, 1364.6, 1442.5, 1565.3, 1586.9, 1621.5, 1658.1, 1744.3, 2829.6, 2946.2, 3097.0, 3104.0, 3118.9
TS5-d	0.7193 0.1262 0.1107	1774.5i , 37.1, 46.6, 79.8, 98.0, 130.3, 148.6, 176.5, 192.7, 214.3, 241.2, 252.7, 256.6, 291.2, 324.8, 381.3, 396.8, 408.3, 426.1, 446.6, 480.9, 513.6, 573.0, 577.9, 621.6, 642.5, 660.5, 698.7, 713.0, 724.1, 769.3, 785.8, 839.8, 849.9, 858.9, 871.2, 888.5, 897.5, 951.7, 999.9, 1016.2, 1072.6, 1107.9, 1145.1, 1171.9, 1194.7, 1206.5, 1227.9, 1258.6, 1288.3, 1327.4, 1360.9, 1396.7, 1428.5, 1495.5, 1545.2, 1568.8, 1591.9, 1892.2, 2975.6, 3107.0, 3111.7, 3117.8
IM5-d	0.7075 0.1312 0.1197	36.6, 45.5, 69.4, 107.1, 122.5, 136.7, 152.6, 177.0, 195.2, 230.6, 254.5, 257.3, 281.1, 329.7, 360.1, 382.5, 417.5, 423.2, 430.6, 449.2, 507.7, 538.2, 561.7, 624.6, 642.8, 652.8, 681.5, 711.8, 717.0, 748.3, 753.6, 842.0, 854.8, 860.0, 864.8, 884.5, 922.8, 994.9, 1013.9, 1050.2, 1072.4, 1128.0, 1151.1, 1173.8, 1192.6, 1207.1, 1213.4, 1249.3, 1270.7, 1293.6, 1333.6, 1361.5, 1388.2, 1427.5, 1503.9, 1551.3, 1576.0, 1595.3, 2904.0, 3033.8, 3110.3, 3114.5, 3118.5
TS5-d-1	0.6643 0.1233 0.1129	147.6i , 29.5, 36.7, 52.8, 105.5, 110.1, 119.9, 152.3, 167.4, 194.8, 209.7, 241.3, 275.9, 283.6, 305.3, 333.2, 373.2, 378.1, 396.7, 418.0, 422.8, 502.7, 513.9, 540.2, 600.8, 626.9, 641.2, 678.0, 700.1, 709.8, 748.1, 770.8, 832.2, 840.1, 856.1, 867.4, 889.1, 902.7, 951.2, 974.1, 1033.0, 1072.0, 1122.4, 1166.2, 1183.0, 1203.5, 1218.1, 1262.2, 1284.5, 1299.2, 1325.7, 1379.8, 1406.2, 1525.7, 1540.3, 1581.8, 1597.3, 1618.1, 2854.7, 3006.4, 3101.5, 3111.4, 3113.6
P5-d-1	0.6478 0.1209 0.1100	21.5, 32.9, 45.0, 49.7, 69.1, 110.0, 113.5, 129.3, 158.7, 173.5, 198.3, 245.6, 255.9, 272.5, 299.2, 329.7, 355.7, 374.6, 396.3, 420.1, 426.6, 483.8, 532.7, 544.8, 602.4, 628.8, 641.0, 691.7, 699.8, 710.3, 732.5, 778.3, 839.5, 856.0, 857.9, 868.9, 893.2, 939.5, 962.0, 975.3, 1028.8, 1072.6, 1102.9, 1174.3, 1190.1, 1205.0, 1229.6, 1264.1, 1285.4, 1310.9, 1347.9, 1381.5, 1408.4, 1533.3, 1538.4, 1582.6, 1608.2, 1757.8, 2853.6, 2999.4, 3094.8, 3111.5, 3113.5
TS5-d-2	0.6783 0.1298 0.1194	444.0i , 30.7, 39.4, 59.3, 104.2, 116.2, 131.6, 144.7, 170.5, 193.7, 232.8, 249.0, 259.9, 280.8, 314.7, 325.7, 377.5, 410.8, 416.7, 425.1, 461.6, 483.0, 530.2, 564.0, 625.4, 633.6, 643.0, 701.9, 710.3, 722.8, 734.9, 781.4, 816.0, 841.2, 857.6, 864.5, 890.6, 901.8, 958.2, 965.1, 1059.5,

		1074.6, 1110.7, 1156.3, 1197.9, 1214.3, 1247.4, 1269.5, 1288.5, 1301.5, 1344.4, 1376.9, 1401.4, 1421.3, 1536.6, 1546.5, 1583.2, 1591.2, 2858.9, 3086.8, 3106.3, 3107.1, 3117.4
P5-d-2	0.6515 0.1253 0.1152	29.8, 37.6, 55.3, 88.5, 95.0, 111.6, 142.0, 146.7, 180.0, 197.5, 198.2, 207.2, 240.9, 254.7, 295.0, 328.8, 338.4, 365.7, 375.0, 416.4, 424.0, 460.6, 501.4, 541.5, 617.6, 635.7, 647.8, 708.9, 713.7, 718.0, 739.0, 755.5, 768.0, 793.5, 827.6, 837.8, 855.3, 900.6, 962.8, 978.6, 1051.6, 1072.3, 1082.2, 1165.1, 1203.2, 1231.5, 1263.3, 1276.8, 1294.8, 1367.6, 1387.5, 1406.8, 1437.2, 1447.4, 1489.4, 1541.2, 1577.4, 1669.2, 2822.9, 3067.5, 3109.3, 3119.5, 3132.5
RC6	0.6847 0.1273 0.1113	37.7, 43.5, 49.2, 57.4, 97.6, 102.4, 109.5, 134.6, 145.7, 188.1, 198.2, 243.4, 246.1, 251.8, 252.5, 337.4, 370.9, 381.2, 387.4, 426.2, 429.4, 438.6, 452.6, 472.3, 576.3, 606.4, 622.0, 629.7, 655.7, 686.7, 692.9, 706.6, 715.8, 787.0, 834.5, 839.5, 857.9, 864.0, 902.0, 911.1, 1019.9, 1074.8, 1076.7, 1154.9, 1174.5, 1203.0, 1207.7, 1237.0, 1275.7, 1297.8, 1356.7, 1373.9, 1420.9, 1440.3, 1541.1, 1556.6, 1566.0, 1605.5, 3110.3, 3118.3, 3119.9, 3127.7, 3620.3
TS6	0.7156 0.1289 0.1142	423.5i , 42.8, 50.4, 76.9, 111.7, 118.5, 141.8, 177.2, 189.0, 199.4, 206.9, 229.2, 245.9, 250.0, 262.5, 336.0, 349.9, 381.4, 390.1, 411.5, 432.6, 444.8, 472.6, 574.2, 605.4, 626.4, 628.6, 650.4, 666.3, 681.5, 708.7, 724.4, 769.1, 820.7, 831.8, 843.6, 845.7, 871.7, 899.0, 910.3, 1018.4, 1065.3, 1076.3, 1141.6, 1169.5, 1200.3, 1203.9, 1227.0, 1261.7, 1281.8, 1349.3, 1368.0, 1406.1, 1435.7, 1483.9, 1543.7, 1565.6, 1610.2, 3109.7, 3114.7, 3118.7, 3120.0, 3642.2
IM6	0.6876 0.1315 0.1169	35.5, 44.9, 72.0, 120.3, 132.9, 168.8, 186.5, 196.5, 213.7, 217.2, 244.5, 255.2, 282.8, 305.5, 341.2, 351.6, 371.8, 395.4, 419.5, 435.0, 469.4, 476.6, 572.3, 575.4, 615.8, 619.1, 631.0, 643.1, 673.2, 696.5, 724.0, 740.2, 770.0, 822.0, 843.5, 859.6, 881.6, 885.5, 906.5, 987.4, 1041.5, 1076.0, 1102.2, 1116.5, 1178.2, 1188.2, 1201.9, 1216.4, 1258.8, 1280.1, 1298.3, 1337.8, 1368.2, 1436.6, 1453.5, 1540.2, 1569.8, 1608.0, 3104.3, 3105.5, 3106.4, 3119.7, 3665.6
TS6-a	0.5602 0.1397 0.1258	188.8i , 24.4, 43.4, 57.1, 115.5, 140.9, 152.3, 176.2, 191.0, 206.3, 226.6, 242.7, 262.9, 286.4, 304.8, 336.3, 345.3, 386.0, 409.2, 416.1, 439.8, 450.8, 481.6, 517.6, 526.3, 548.0, 596.6, 628.5, 638.5, 664.1, 680.1, 720.4, 732.5, 750.7, 810.8, 848.3, 881.5, 886.9, 910.3, 986.1, 1035.4, 1056.5, 1095.8, 1124.1, 1145.7, 1187.7, 1219.2, 1224.5, 1258.8, 1279.0, 1325.2, 1393.8, 1442.8, 1445.9, 1522.4, 1537.7, 1574.4, 1665.9, 2966.8, 3030.9, 3110.0, 3116.7, 3671.6
IM6-a	0.5497 0.1412 0.1264	27.1, 42.3, 58.7, 95.2, 116.3, 140.7, 151.0, 189.2, 193.5, 205.1, 234.5, 242.0, 270.5, 288.1, 319.7, 332.5, 351.5, 371.2, 400.4, 416.3, 436.7, 450.1, 479.9, 517.3, 532.8, 552.8, 610.1, 626.0, 631.3, 668.7, 680.3, 719.3, 728.7, 737.8, 809.5, 850.2, 879.6, 885.3, 902.6, 984.6, 1043.2,

		1062.2, 1099.4, 1128.5, 1137.4, 1180.8, 1219.6, 1230.9, 1256.4, 1268.5, 1324.2, 1403.6, 1445.2, 1517.5, 1525.1, 1574.9, 1588.9, 1709.6, 2956.2, 3033.2, 3114.5, 3116.3, 3673.8
TS6-a-1	0.4288 0.1716 0.1624	513.8i , 25.8, 32.4, 54.8, 87.8, 91.6, 114.4, 146.5, 167.7, 177.0, 194.3, 200.4, 255.6, 275.2, 294.7, 327.2, 336.9, 369.1, 394.5, 408.4, 418.2, 439.8, 444.3, 463.2, 493.8, 525.6, 553.7, 573.4, 620.7, 626.0, 655.1, 673.3, 679.8, 694.6, 773.0, 804.6, 829.8, 857.0, 872.5, 962.0, 983.8, 1040.1, 1079.8, 1103.0, 1139.2, 1186.4, 1207.4, 1208.7, 1236.7, 1284.2, 1308.4, 1368.4, 1418.3, 1493.8, 1584.7, 1592.3, 1643.3, 1815.3, 3003.3, 3078.4, 3099.4, 3100.9, 3680.3
P6-a-1	0.4122 0.1689 0.1484	16.5, 25.3, 32.7, 45.1, 70.9, 90.6, 113.4, 141.8, 145.3, 170.6, 193.0, 197.8, 254.7, 270.2, 276.6, 302.1, 335.8, 375.4, 397.1, 409.4, 425.1, 428.0, 435.9, 467.3, 494.6, 509.7, 514.4, 587.7, 592.7, 617.1, 637.1, 653.9, 688.6, 693.9, 771.1, 811.3, 831.4, 881.0, 884.0, 976.6, 987.5, 1068.5, 1093.2, 1111.3, 1152.7, 1175.0, 1209.4, 1226.2, 1240.1, 1303.0, 1371.4, 1386.3, 1417.9, 1487.1, 1549.6, 1568.3, 1602.3, 2121.1, 3006.3, 3081.3, 3087.4, 3111.0, 3700.6
TS6-b	0.7112 0.1197 0.1118	365.3i , 30.1, 42.6, 64.1, 78.4, 132.7, 165.5, 188.5, 194.8, 201.7, 227.0, 239.7, 263.9, 275.5, 278.9, 307.0, 330.3, 386.6, 394.0, 396.2, 423.8, 449.1, 457.8, 517.2, 580.2, 590.9, 602.0, 624.8, 628.6, 647.9, 683.6, 705.5, 716.8, 752.0, 786.1, 798.3, 844.6, 872.4, 880.4, 906.1, 955.2, 1040.1, 1070.8, 1104.8, 1135.3, 1199.4, 1218.7, 1224.6, 1280.4, 1297.7, 1350.7, 1377.6, 1429.4, 1446.6, 1476.5, 1534.4, 1563.5, 1596.1, 3082.9, 3112.7, 3118.7, 3144.3, 3676.6
IM6-b	0.7398 0.1114 0.0990	18.9, 34.7, 44.2, 76.8, 99.1, 131.0, 152.5, 169.5, 192.0, 203.4, 217.8, 227.6, 251.7, 282.6, 298.4, 335.1, 361.9, 395.9, 411.8, 418.8, 431.6, 442.6, 477.2, 523.3, 579.0, 607.7, 622.7, 627.7, 647.7, 658.5, 663.0, 709.2, 714.5, 724.0, 765.0, 817.7, 843.3, 866.6, 889.3, 900.2, 944.9, 1017.4, 1071.7, 1090.0, 1153.9, 1201.9, 1234.2, 1256.7, 1299.8, 1326.0, 1361.9, 1412.0, 1451.4, 1541.2, 1562.6, 1571.6, 1594.0, 1613.3, 3070.3, 3113.1, 3118.0, 3178.0, 3544.0
TS6-b-1	0.7844 0.1072 0.0954	174.7i , 18.4, 37.1, 74.2, 77.4, 128.7, 154.6, 189.9, 193.8, 205.0, 214.1, 220.0, 255.1, 290.6, 298.3, 346.0, 369.2, 408.2, 414.2, 432.2, 443.7, 467.0, 524.5, 526.9, 589.6, 607.5, 618.9, 633.1, 653.2, 660.9, 701.1, 714.9, 717.9, 765.9, 783.6, 837.3, 841.2, 870.0, 893.3, 906.3, 952.7, 1041.0, 1072.9, 1084.3, 1161.0, 1201.5, 1235.2, 1280.6, 1333.3, 1351.3, 1368.3, 1399.9, 1445.2, 1466.5, 1535.6, 1547.5, 1563.5, 1592.5, 2614.2, 3068.0, 3113.3, 3114.9, 3118.7
P6-b-1	0.7419 0.1135 0.1011	23.5, 31.9, 34.8, 71.4, 96.2, 115.4, 136.0, 169.9, 181.5, 194.3, 218.2, 220.7, 246.9, 285.3, 304.3, 351.1, 370.7, 402.1, 422.0, 426.1, 452.2, 494.1, 532.2, 587.1, 608.2, 612.4, 633.5, 665.8, 675.8, 679.8, 691.0, 732.8, 749.9, 799.1, 843.5, 864.2, 886.2, 900.5, 903.7, 933.5, 974.3, 1070.3, 1102.3, 1133.7, 1147.8, 1193.5, 1209.1, 1266.3, 1293.1, 1344.0, 1378.8, 1395.2, 1422.1, 1456.3, 1570.1, 1594.3, 1602.9, 1636.0,

		3059.0, 3063.1, 3105.6, 3117.2, 3151.7
TS6-c	0.6445 0.1351 0.1212	1716.9i , 35.6, 42.9, 65.1, 118.2, 143.6, 181.6, 192.1, 201.1, 214.9, 246.1, 257.2, 277.1, 317.4, 330.8, 360.2, 381.9, 408.1, 430.8, 453.7, 469.2, 475.8, 590.9, 609.0, 617.6, 622.1, 637.9, 658.6, 685.4, 706.5, 728.5, 745.2, 808.5, 833.4, 841.9, 867.4, 883.9, 890.8, 912.6, 989.3, 1026.9, 1038.6, 1068.2, 1087.9, 1117.0, 1184.0, 1208.0, 1220.0, 1269.7, 1275.1, 1291.6, 1328.0, 1365.0, 1438.2, 1498.2, 1560.4, 1583.2, 1596.7, 1845.5, 3096.9, 3100.4, 3109.0, 3117.9
IM6-c	0.5999 0.1400 0.1284	17.2, 35.7, 58.3, 108.5, 122.5, 160.7, 187.5, 194.8, 204.4, 237.0, 249.7, 257.6, 295.2, 316.2, 340.5, 375.2, 385.6, 424.7, 437.7, 459.0, 471.7, 548.7, 593.9, 605.5, 617.7, 628.6, 642.7, 660.5, 692.8, 708.1, 748.2, 822.2, 830.8, 837.2, 873.6, 875.7, 908.8, 925.5, 952.2, 1018.7, 1035.8, 1060.1, 1079.4, 1108.3, 1163.3, 1204.8, 1213.7, 1241.7, 1264.1, 1285.1, 1313.5, 1325.0, 1362.2, 1431.0, 1545.6, 1569.2, 1575.1, 1621.5, 2960.0, 3096.9, 3103.3, 3109.1, 3117.8
TS6-c-1	0.6545 0.1343 0.1298	347.1i , 36.5, 43.7, 59.3, 100.6, 155.4, 167.0, 192.6, 198.5, 202.2, 230.3, 264.1, 266.2, 291.1, 302.0, 344.4, 380.2, 401.4, 417.2, 434.5, 461.3, 489.4, 541.7, 563.5, 600.7, 607.9, 627.3, 658.8, 668.8, 702.3, 725.2, 762.9, 801.7, 836.2, 847.9, 877.9, 894.4, 914.4, 951.3, 991.6, 1020.8, 1044.7, 1083.3, 1120.8, 1146.6, 1195.7, 1214.4, 1235.3, 1264.2, 1309.1, 1339.1, 1349.4, 1373.0, 1431.6, 1539.4, 1548.8, 1575.7, 1586.8, 3019.6, 3072.1, 3079.0, 3104.5, 3116.9
P6-c-1	0.6783 0.1324 0.1260	26.3, 38.0, 53.8, 82.8, 93.5, 143.7, 162.1, 178.7, 191.2, 197.5, 202.0, 227.9, 264.1, 290.7, 322.0, 336.8, 366.3, 394.7, 420.4, 446.6, 61.2, 477.0, 516.2, 557.5, 580.5, 599.5, 616.9, 643.0, 671.5, 711.0, 736.8, 751.2, 780.6, 795.9, 860.8, 877.4, 889.3, 905.6, 912.2, 986.7, 1017.8, 1031.4, 1093.5, 1151.4, 1187.3, 1207.9, 1216.7, 1239.5, 1263.9, 1298.6, 1339.8, 1384.7, 1434.4, 1477.0, 1526.6, 1536.1, 1569.5, 1696.3, 3059.1, 3060.4, 3080.3, 3103.5, 3112.4
TS6-c-2	0.6002 0.1361 0.1350	316.3i , 28.0, 34.9, 55.2, 81.7, 132.9, 155.4, 186.3, 193.1, 197.1, 215.3, 236.5, 270.4, 294.3, 311.3, 324.7, 358.9, 396.2, 420.6, 428.2, 448.4, 480.5, 535.2, 577.9, 591.6, 617.7, 628.2, 631.5, 660.6, 668.8, 682.4, 720.8, 745.2, 812.3, 819.1, 842.8, 883.1, 897.3, 918.8, 927.2, 963.3, 1035.6, 1073.8, 1087.6, 1130.3, 1188.3, 1205.4, 1259.5, 1266.5, 1304.9, 1313.3, 1376.7, 1426.0, 1525.5, 1560.3, 1579.5, 1584.1, 1610.7, 2941.0, 3098.1, 3100.5, 3117.3, 3186.1
P6-c-2	0.5212 0.1577 0.1337	9.2, 24.5, 38.3, 57.1, 86.0, 112.6, 141.6, 159.5, 179.9, 188.3, 203.6, 206.3, 255.5, 283.2, 303.7, 326.7, 339.9, 376.5, 423.4, 450.5, 470.0, 507.2, 517.7, 589.0, 592.6, 609.1, 632.8, 640.8, 653.8, 663.6, 687.1, 706.8, 732.3, 772.6, 816.8, 839.6, 865.9, 888.2, 916.1, 920.6, 980.8, 1005.0, 1074.5, 1087.5, 1144.0, 1181.7, 1202.0, 1229.7, 1276.9, 1301.2, 1313.4, 1386.3, 1426.7, 1561.1, 1587.0, 1604.6, 1658.0, 1737.2, 2944.8,

		3083.6, 3105.6, 3118.6, 3192.7
TS6-c-3	0.4790 0.1524 0.1457	270.0i , 27.2, 31.0, 46.2, 98.4, 143.5, 169.9, 189.3, 196.5, 199.0, 203.8, 264.6, 283.1, 311.0, 326.5, 342.7, 360.0, 389.5, 400.0, 419.1, 451.6, 485.2, 531.2, 588.8, 603.6, 614.1, 621.9, 631.1, 643.4, 668.9, 710.5, 772.5, 811.5, 840.1, 845.0, 854.5, 867.6, 935.0, 972.6, 988.6, 1029.9, 1040.4, 1078.7, 1167.7, 1185.1, 1190.8, 1228.0, 1248.4, 1257.4, 1292.7, 1309.9, 1330.7, 1401.5, 1447.6, 1513.0, 1551.4, 1578.8, 1610.7, 2959.2, 3095.3, 3098.3, 3103.9, 3106.7
P6-c-3	0.4589 0.1794 0.1446	31.3, 32.8, 57.9, 71.9, 132.3, 153.1, 181.5, 195.9, 197.0, 216.2, 260.2, 290.2, 306.3, 334.7, 347.1, 366.6, 375.1, 415.4, 429.8, 486.8, 515.5, 559.1, 573.0, 592.4, 632.1, 640.7, 653.3, 681.1, 719.4, 746.1, 759.5, 798.4, 840.7, 857.8, 876.4, 905.4, 939.1, 991.0, 1008.0, 1053.2, 1082.7, 1096.0, 1166.4, 1183.8, 1195.5, 1211.1, 1217.1, 1255.5, 1274.4, 1283.6, 1318.3, 1336.5, 1360.2, 1406.3, 1442.5, 1562.1, 1587.3, 1633.3, 2923.2, 2986.7, 3106.8, 3110.4, 3118.8
TS6-d	0.7020 0.1297 0.1147	1636.8i , 38.8, 46.4, 79.2, 121.0, 129.9, 176.4, 186.8, 195.7, 211.2, 226.1, 247.9, 253.8, 301.9, 336.5, 354.0, 385.0, 398.9, 427.4, 456.0, 465.5, 509.7, 566.8, 591.8, 616.4, 622.6, 640.1, 646.6, 695.9, 703.6, 727.3, 759.8, 828.6, 837.2, 845.7, 868.1, 885.1, 897.6, 912.3, 1001.9, 1037.0, 1064.8, 1084.4, 1128.9, 1136.3, 1157.7, 1186.6, 1210.7, 1223.1, 1271.1, 1299.9, 1330.1, 1367.6, 1415.8, 1436.7, 1563.6, 1586.3, 1638.6, 1891.7, 3042.6, 3101.7, 3109.8, 3119.2
IM6-d	0.7395 0.1288 0.1132	37.2, 48.1, 82.0, 97.8, 124.2, 169.5, 180.9, 195.6, 205.8, 208.8, 236.3, 250.4, 279.6, 311.2, 330.1, 349.5, 377.2, 397.6, 428.9, 446.2, 476.2, 559.2, 567.1, 596.4, 617.8, 642.7, 652.3, 671.9, 695.0, 708.9, 734.9, 829.2, 837.9, 842.7, 874.8, 884.2, 896.2, 953.9, 1006.0, 1031.6, 1051.0, 1085.2, 1095.9, 1134.1, 1178.5, 1186.2, 1213.5, 1223.4, 1270.8, 1289.7, 1307.1, 1360.8, 1405.2, 1432.7, 1542.9, 1567.8, 1578.6, 1677.0, 2915.6, 3003.4, 3109.3, 3110.2, 3120.0
TS6-d-1	0.7430 0.1277 0.1131	374.0i , 39.4, 42.9, 67.6, 93.2, 132.3, 150.9, 177.7, 192.2, 194.8, 211.5, 249.1, 272.9, 302.4, 315.0, 362.2, 373.9, 392.6, 421.1, 430.9, 463.4, 471.4, 552.6, 577.2, 605.9, 613.9, 620.5, 647.2, 651.6, 681.8, 698.8, 728.4, 743.9, 824.5, 843.9, 865.8, 879.3, 892.2, 941.2, 987.9, 1010.3, 1073.1, 1083.1, 1111.0, 1130.4, 1170.4, 1183.3, 1210.0, 1271.8, 1296.7, 1359.8, 1400.4, 1419.3, 1422.6, 1463.6, 1562.2, 1574.5, 1613.5, 3006.0, 3090.0, 3101.9, 3106.6, 3116.6
P6-d-1	0.7419 0.1135 0.1011	23.5, 31.9, 34.8, 71.4, 96.1, 115.4, 136.0, 169.9, 181.5, 194.3, 218.2, 220.7, 246.9, 285.3, 304.3, 351.1, 370.7, 402.0, 422.0, 426.1, 452.2, 494.2, 532.2, 587.1, 608.2, 612.5, 633.5, 665.8, 675.8, 679.8, 691.0, 732.8, 749.9, 799.0, 843.6, 864.3, 886.2, 900.4, 903.7, 933.4, 974.2, 1070.3, 1102.3, 1133.8, 1147.8, 1193.5, 1209.1, 1266.3, 1293.1, 1344.0, 1378.8, 1395.3, 1422.1, 1456.3, 1570.1, 1594.2, 1603.0, 1636.2, 3059.0, 3063.0, 3105.6, 3117.1, 3151.6
TS6-d-2	0.7146	331.6i , 30.2, 44.1, 73.8, 93.6, 126.8, 169.2, 170.9, 193.4, 194.6, 197.1,

	0.1199 0.1075	233.0, 252.4, 301.0, 315.9, 340.3, 354.0, 369.0, 387.4, 416.4, 426.3, 484.2, 517.4, 564.9, 587.1, 602.1, 622.2, 639.7, 643.9, 666.8, 697.2, 723.3, 819.3, 848.9, 853.4, 877.4, 881.8, 921.4, 970.8, 1017.5, 1062.9, 1078.7, 1114.3, 1153.4, 1186.5, 1199.9, 1214.5, 1257.7, 1259.7, 1308.4, 1329.2, 1394.7, 1401.4, 1457.5, 1516.9, 1564.7, 1570.6, 1640.9, 2923.1, 3012.9, 3096.3, 3100.8, 3105.3
P6-d-2	0.7347 0.1040 0.1012	19.9, 22.1, 33.8, 71.1, 96.0, 107.1, 160.0, 170.7, 174.7, 192.7, 203.8, 242.6, 286.9, 295.6, 319.9, 343.5, 355.1, 367.4, 397.7, 417.9, 447.0, 512.9, 538.8, 548.1, 573.5, 596.3, 614.5, 632.9, 643.9, 653.3, 705.3, 743.2, 810.0, 846.6, 860.1, 888.5, 898.3, 933.9, 979.9, 1032.0, 1071.8, 1083.5, 1143.0, 1163.0, 1184.1, 1197.0, 1234.0, 1247.1, 1279.4, 1321.2, 1327.7, 1369.3, 1394.7, 1502.4, 1552.6, 1571.7, 1620.0, 1695.3, 2920.5, 2978.0, 3088.1, 3100.1, 3100.4
TS6-e	0.6256 0.1261 0.1170	439.5i , 29.4, 46.0, 62.0, 97.9, 151.4, 168.7, 184.0, 191.4, 194.3, 195.4, 226.5, 247.2, 290.9, 308.0, 337.7, 356.1, 371.3, 390.5, 416.7, 423.3, 442.8, 480.2, 537.0, 593.2, 609.3, 630.7, 638.0, 654.7, 668.1, 679.7, 707.8, 762.7, 818.0, 830.2, 847.6, 856.4, 869.1, 928.7, 968.9, 1073.8, 1082.9, 1109.6, 1158.9, 1183.2, 1193.3, 1199.1, 1222.3, 1255.2, 1261.6, 1324.3, 1326.8, 1391.7, 1424.3, 1475.6, 1525.2, 1541.9, 1562.5, 3085.7, 3097.6, 3102.2, 3109.0, 3673.3
P6-e	0.6910 0.1059 0.1052	16.9, 21.0, 35.0, 86.8, 100.4, 152.6, 164.1, 171.0, 193.3, 202.4, 226.9, 255.6, 272.2, 281.1, 317.8, 332.8, 368.5, 373.6, 408.7, 417.9, 436.6, 452.1, 512.9, 545.0, 573.2, 603.2, 628.8, 633.5, 640.7, 661.2, 670.5, 727.7, 783.3, 808.5, 811.9, 843.8, 869.2, 880.9, 941.0, 977.9, 1083.4, 1097.7, 1118.4, 1172.7, 1192.3, 1208.9, 1231.4, 1244.5, 1269.9, 1285.8, 1328.6, 1361.6, 1395.6, 1467.6, 1503.3, 1564.7, 1572.3, 1584.3, 3082.5, 3085.9, 3098.9, 3112.5, 3716.0