Weather file decomposition analysis

```
## Loading required package: rJava

## Loading required package: xlsxjars

##
## Attaching package: 'lubridate'

## The following object is masked from 'package:base':
##
##     date

## Loading required package: fields

## Loading required package: spam

## Loading required package: grid

## Spam version 1.4-0 (2016-08-29) is loaded.
## Type 'help( Spam)' or 'demo( spam)' for a short introduction
## and overview of this package.
## Help for individual functions is also obtained by adding the
## suffix '.spam' to the function name, e.g. 'help( chol.spam)'.

##
## Attaching package: 'spam'

## The following objects are masked from 'package:base':
##
##     backsolve, forwardsolve

## Loading required package: maps

## Loading required package: locfit

## locfit 1.5-9.1    2013-03-22

## Loading required package: foreach

## Loading required package: iterators

## Package 'GA' version 3.0.2

## Type 'citation("GA")' for citing this R package in publications.

## analyse.location.R :
## analyse.results.R :
## CIBSE.calcs.R :
## create.gen.heatwav.R :
## define_e.R :
## display.results.R :
## display.temps.R :
## gen.run.weather.R :
## generateSiteValues.R :
## mod.gen.R :
## PMV_BSI.R :
## remove.low.delT.R :
## Run.Simulators.R :
## runEP.r :
## Running_mean_temperature.R :
```

```
## runwin.R :
## sampleGenerator.R :
## scale.x.R :
## simulator.deconstruct.R :
## simulator.R :
## Sort_overheating.R :
## UTCI.R :
## weather.file.select.R :
## windowCoordinates.R :
## writeCoordinates.R :
```

Hilbert Huang decomposition basics

Here's my quick review of what we've done so far.

We started by decomposing the weather file using the Hilbert Huang empirical mode decomposition (EMD). If you're not familiar with the method, watch this talk by Norbert Huang:

Assuming you understand all that, I'll go on...

The EMD creates decomposes a time domain signal into a *residual* and a several *intrinsic mode functions* (IMFs). If we add up all IMFs and the residual, we get the original signal.

Here's an example of an residue of an EMD analysis with the original temperature trace (outdoor dry bulb).

```r
# emd analysis for one of the weather files
fileName="../../weather-files/DSY/Norwich_DSY3.epw"
connection=file(fileName,open="r")
header=readLines(connection)[1:8]
weather.dat = read.table(fileName, skip = 8, header = FALSE, sep =',')
close(connection)
decomp=emd(weather.dat$V7, max.sift=6, boundary="wave", plot.imf=F)
temp.lims = c(-10,35)
plot(decomp$residue, main='Residue', type='l', lwd=3, ylim=temp.lims, ylab='hour', xlab='temp')
```
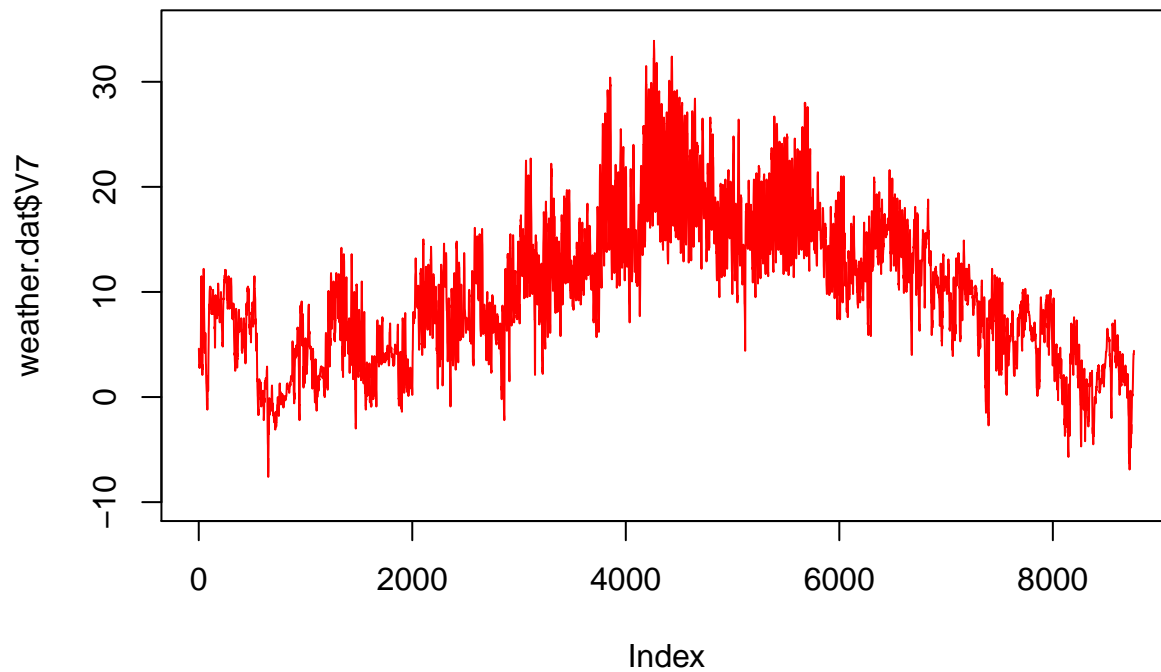
Residue
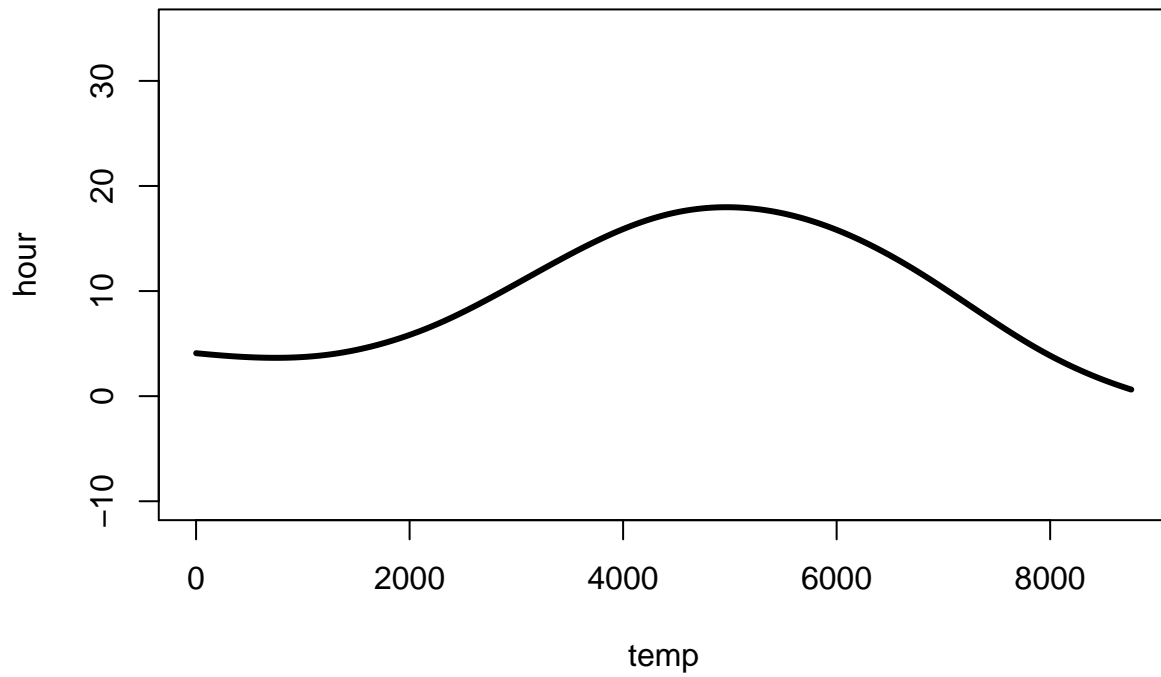

```r
plot(weather.dat$V7, main='Total', type='l', col='red', lwd='red', ylim=temp.lims)
```

```
## Warning in plot.xy(xy, type, ...): NAs introduced by coercion
```
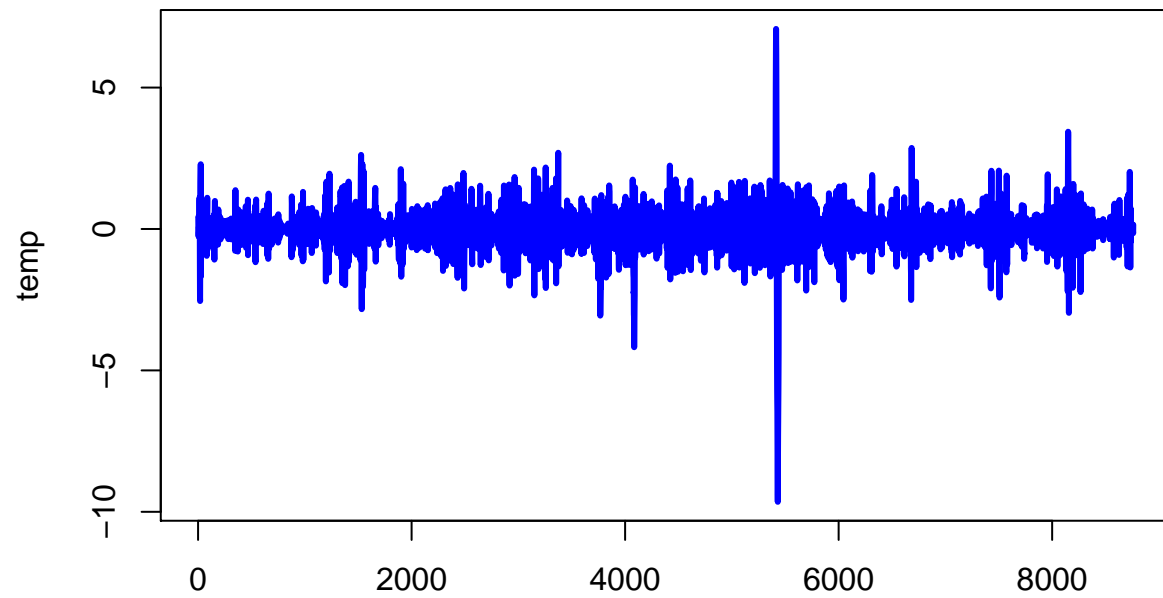
Total

The IMFs then constitute the 'noise' that is added on top. The IMFs increase in 'frequency' with index:

```
for (i in 1:ncol(decomp$imf)){
  plot(decomp$imf[,i], type='l', col='blue', lwd=3, xlab='hour', ylab='temp', main=paste('IMF', i))
}
```

IMF 1

IMF 2
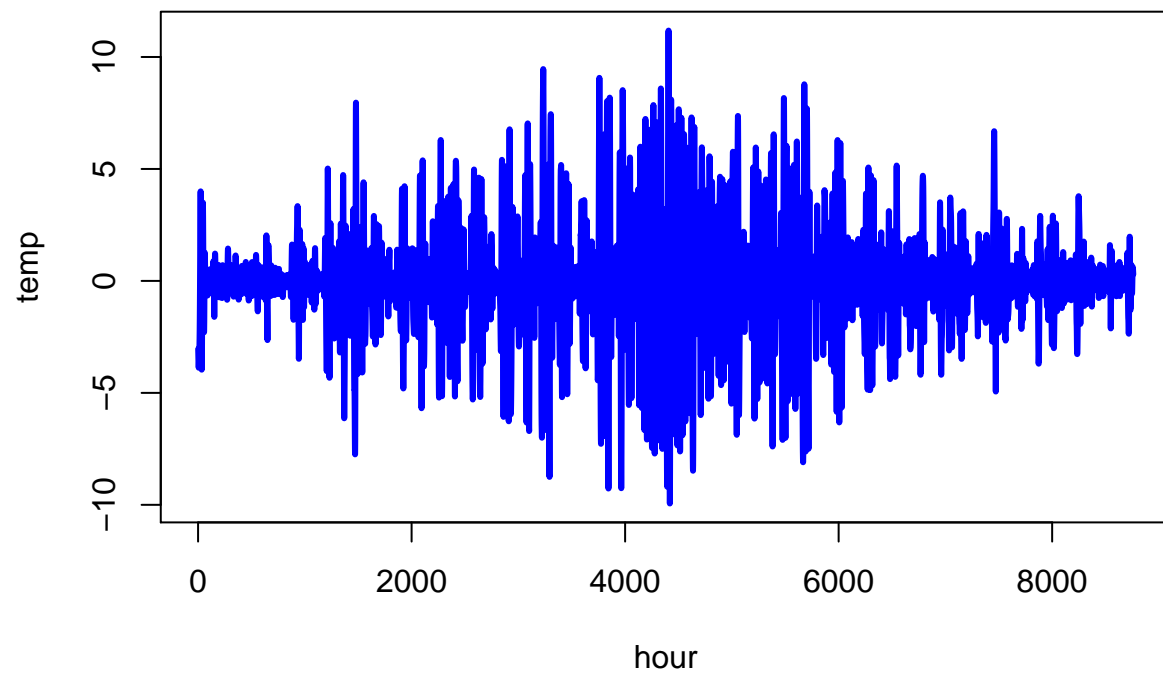
IMF 5
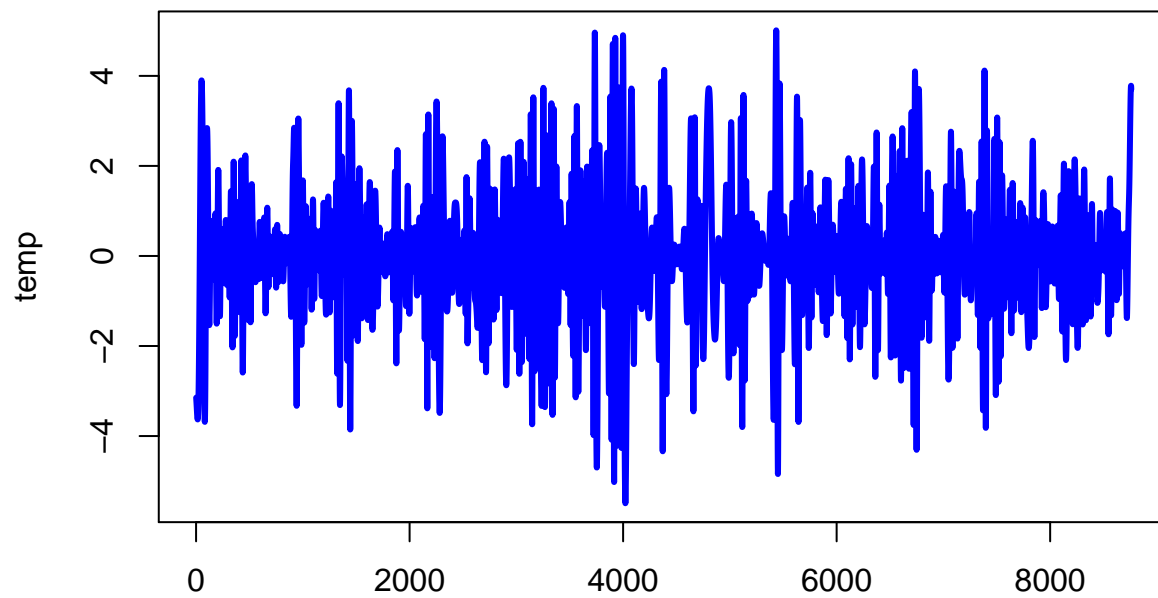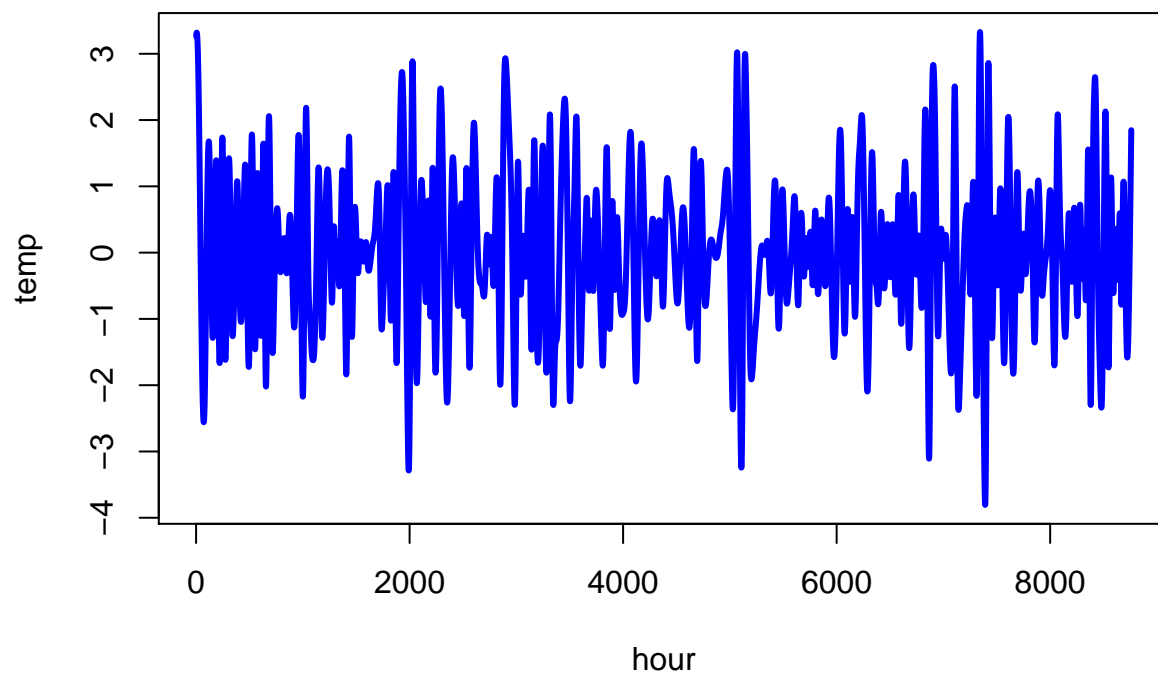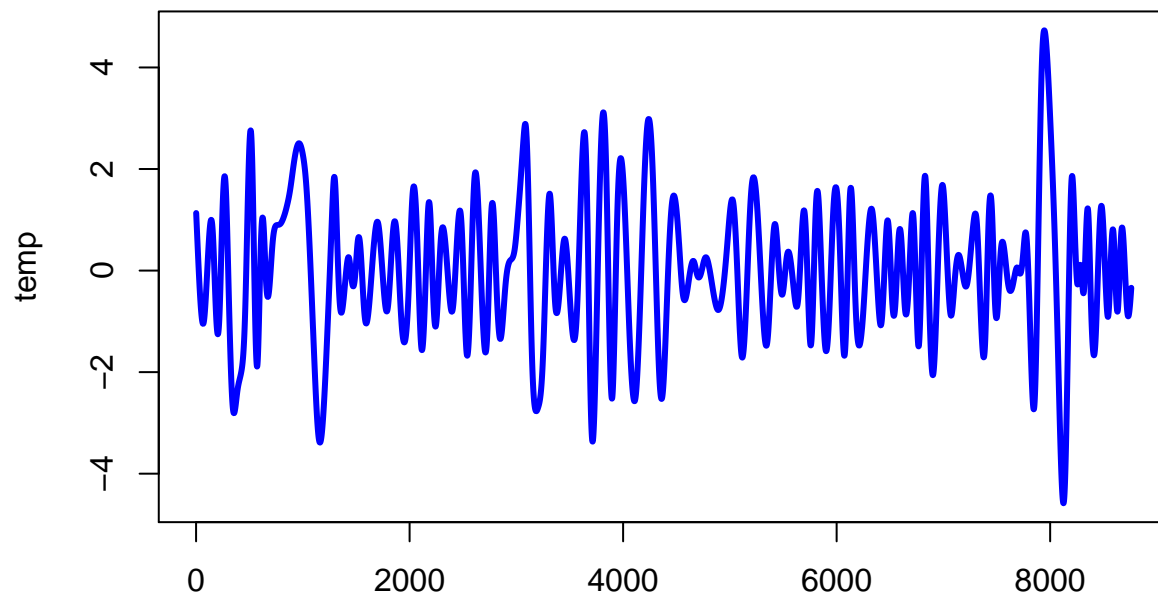
hour

IMF 6

hour

6
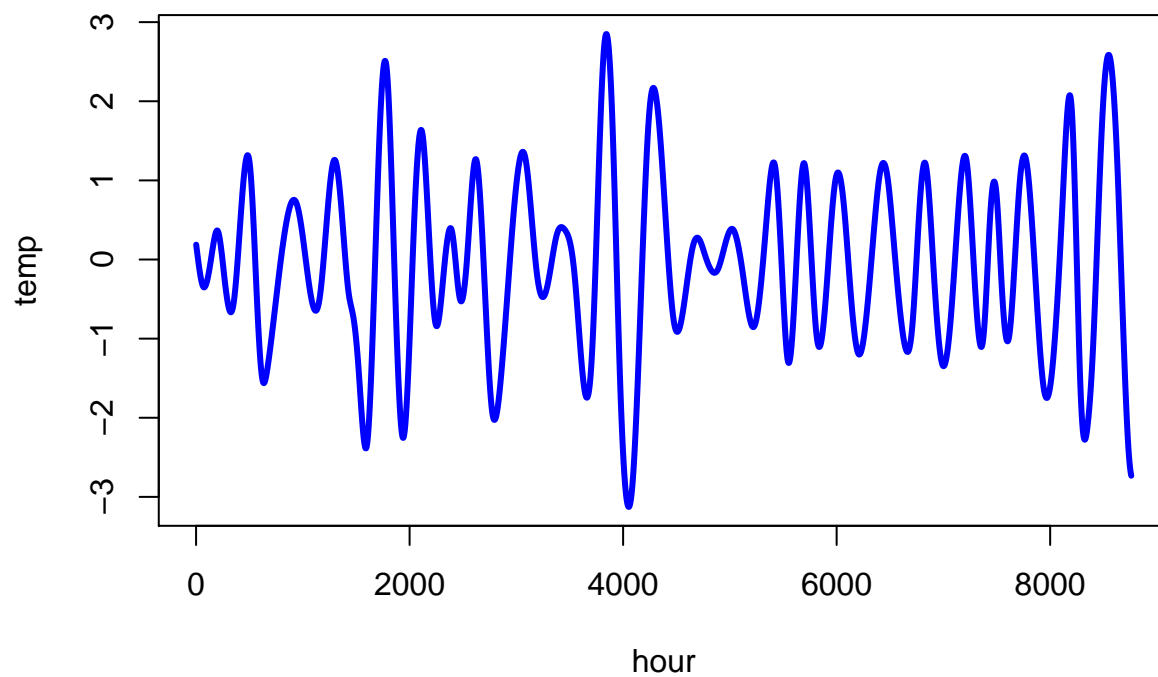
IMF 7
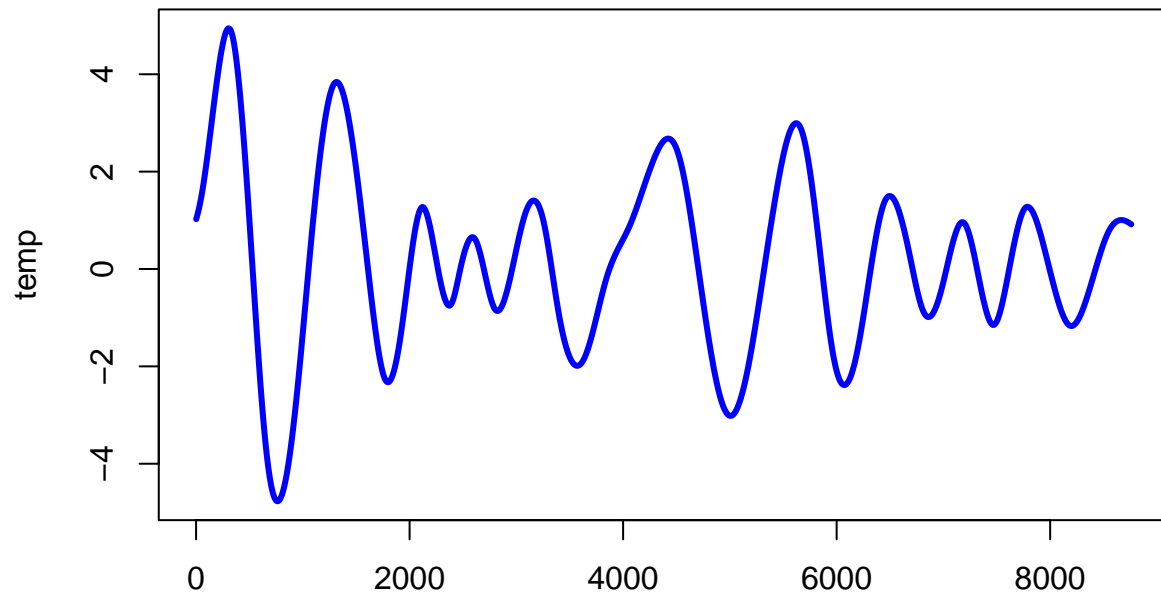
IMF 8
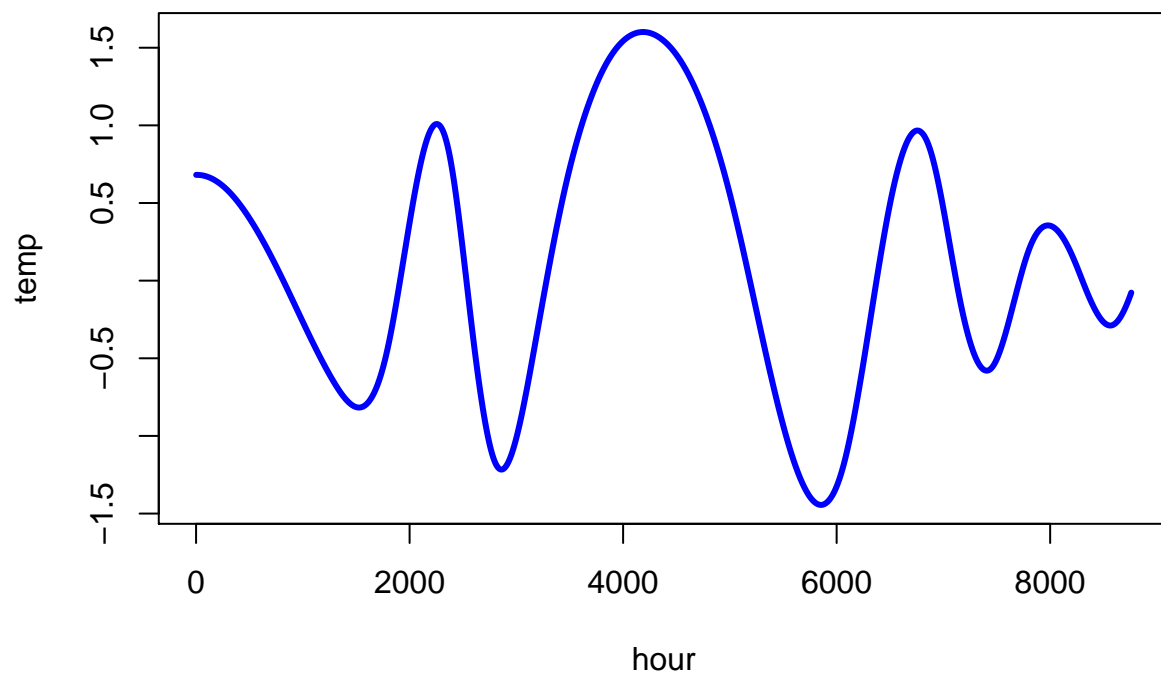
What we've done with this is unsophisticated, but interesting. We've took the residue:

```r
plot(decomp$residue, main='Residue / Trend', type='l', lwd=3, ylim=temp.lims, ylab='hour', xlab='temp')
```

Residue / Trend
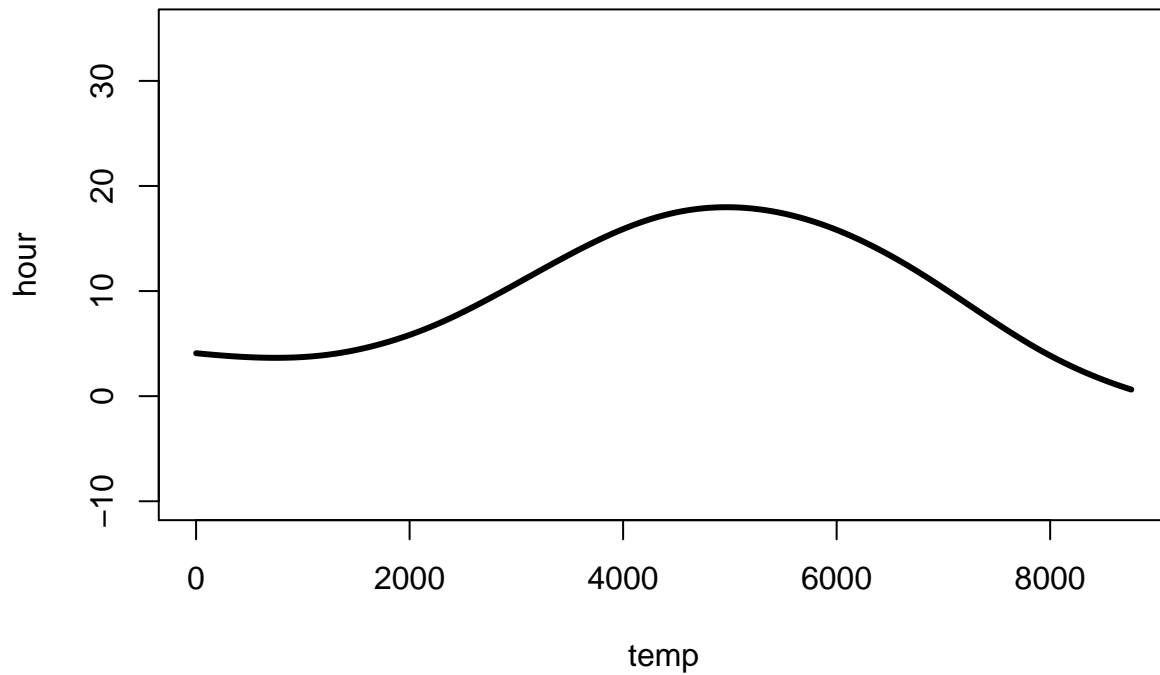
And the sum of **all** the IMFs:

```r
sum.imfs = apply(decomp$imf, MARGIN = 1, FUN = sum)
plot(sum.imfs, type='l', col='blue', lwd=3, xlab='hour', ylab='temp', main=paste('The rest'))
```

The rest
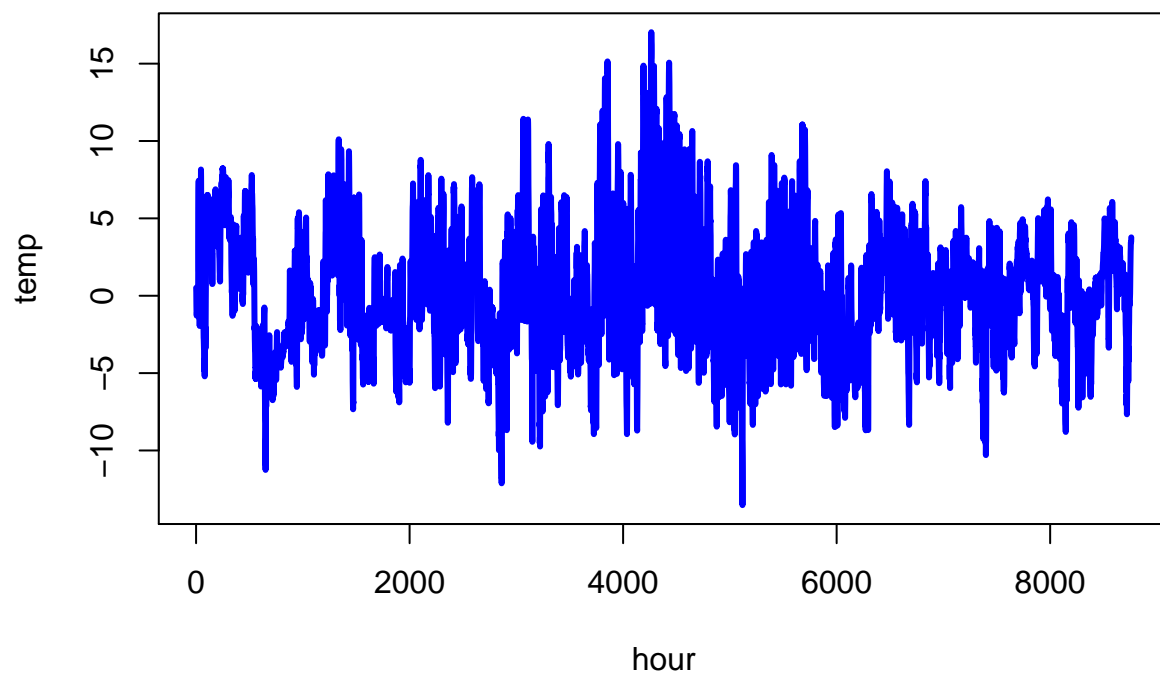
To reduce the size of the weather file, we've been adding the *residue* to *the rest*, but only taking out certain

chunks:

```
index = rep(0, length(decomp$residue))
index[3000:4000]=1 # imf chunk select index
plot(decomp$residue+sum.imfs*index, type='l', col='blue', lwd=3, xlab='hour', ylab='temp', main=paste('
```

The rest
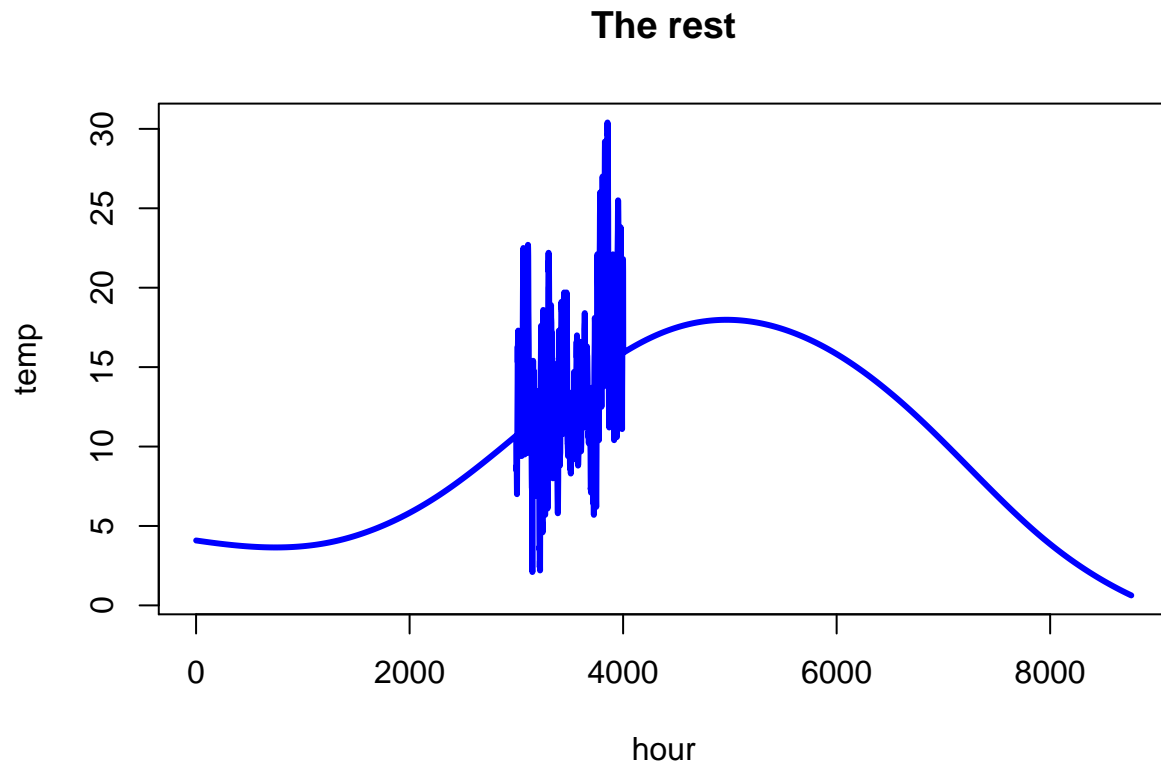
sum.imfs

```
##    [1]   5.142064e-01   2.151843e-01  -5.838383e-01  -9.828614e-01
##    [5]  -1.281885e+00  -1.280909e+00  -1.279934e+00  -1.078959e+00
##    [9]  -1.177985e+00  -9.770112e-01  -1.276038e+00  -5.750654e-01
##   [13]   1.259067e-01   4.268782e-01   1.278492e-01  -7.118039e-02
##   [17]  -7.702105e-01  -1.169241e+00  -4.682724e-01   1.532696e+00
##   [21]   3.333663e+00   5.534631e+00   6.835597e+00   7.336563e+00
##   [25]   7.437528e+00   3.038493e+00   1.639458e+00   1.340421e+00
##   [29]   9.413844e-01   6.423469e-01  -4.566911e-01  -1.455730e+00
##   [33]  -9.547689e-01  -1.953809e+00  -8.528491e-01  -2.518901e-01
##   [37]   5.490684e-01   8.500262e-01   1.950983e+00   3.851940e+00
##   [41]   5.552896e+00   6.653852e+00   6.354807e+00   6.355761e+00
##   [45]   6.956714e+00   8.157667e+00   7.658620e+00   5.759572e+00
##   [49]   4.560523e+00   4.361474e+00   3.462424e+00   2.863373e+00
##   [53]   2.064322e+00   1.465270e+00   1.366217e+00   7.671640e-01
##   [57]   1.681102e-01   2.690557e-01   1.170001e+00   1.470945e+00
##   [61]   2.071889e+00   2.072832e+00   1.973774e+00   1.774716e+00
##   [65]   8.756568e-01  -2.340282e-02  -8.224631e-01  -9.215240e-01
##   [69]  -1.720586e+00  -2.219648e+00  -2.718711e+00  -2.817774e+00
##   [73]  -3.116838e+00  -3.415903e+00  -3.514969e+00  -4.114035e+00
##   [77]  -4.813102e+00  -4.112169e+00  -4.811238e+00  -5.110307e+00
##   [81]  -5.209376e+00  -4.808447e+00  -3.907518e+00  -2.906589e+00
##   [85]  -2.505662e+00  -2.004735e+00  -2.903809e+00  -3.402883e+00
##   [89]  -3.001958e+00  -1.601034e+00  -2.001106e-01   6.008121e-01
```

```
##   [93] 1.301734e+00  2.502655e+00  2.903576e+00  4.004496e+00
##   [97] 4.405415e+00  4.806333e+00  4.407251e+00  5.108168e+00
##  [101] 5.509084e+00  6.010000e+00  6.210915e+00  6.311829e+00
##  [105] 6.512742e+00  6.413654e+00  6.314566e+00  6.215477e+00
##  [109] 6.516388e+00  6.317297e+00  6.318206e+00  6.219114e+00
##  [113] 5.820022e+00  5.420928e+00  4.821834e+00  4.422739e+00
##  [117] 4.523643e+00  4.524547e+00  4.425450e+00  3.926352e+00
##  [121] 4.027253e+00  4.428154e+00  4.529053e+00  4.429952e+00
##  [125] 4.330850e+00  4.231748e+00  4.132644e+00  4.333540e+00
##  [129] 4.334435e+00  4.235329e+00  3.936223e+00  4.737115e+00
##  [133] 5.538007e+00  6.238898e+00  5.939788e+00  5.540678e+00
##  [137] 5.641566e+00  5.042454e+00  4.743341e+00  4.744227e+00
##  [141] 4.845113e+00  4.845997e+00  5.246881e+00  5.247764e+00
##  [145] 4.648646e+00  4.349528e+00  3.850408e+00  3.551288e+00
##  [149] 2.552166e+00  2.753044e+00  2.053921e+00  7.547978e-01
##  [153] 7.556732e-01  2.256548e+00  3.057422e+00  4.258295e+00
##  [157] 5.059167e+00  5.760038e+00  5.460908e+00  4.961778e+00
##  [161] 4.762646e+00  4.363514e+00  4.164381e+00  4.065247e+00
##  [165] 3.766112e+00  3.566977e+00  3.567840e+00  3.568703e+00
##  [169] 3.569565e+00  3.770425e+00  3.571285e+00  3.872145e+00
##  [173] 3.973003e+00  4.273860e+00  4.474717e+00  4.475572e+00
##  [177] 4.676427e+00  4.877281e+00  5.178133e+00  5.778985e+00
##  [181] 5.879836e+00  6.880687e+00  6.381536e+00  6.282384e+00
##  [185] 5.383232e+00  4.384078e+00  3.884924e+00  3.985769e+00
##  [189] 5.086612e+00  5.287455e+00  5.188297e+00  4.889138e+00
##  [193] 3.689978e+00  3.590818e+00  3.491656e+00  3.292493e+00
##  [197] 3.193330e+00  3.294165e+00  3.595000e+00  3.395833e+00
##  [201] 3.696666e+00  4.097498e+00  4.398328e+00  5.099158e+00
##  [205] 5.499987e+00  5.600815e+00  5.901642e+00  6.102468e+00
##  [209] 5.603293e+00  4.304117e+00  4.004940e+00  3.805762e+00
##  [213] 3.806583e+00  3.507403e+00  3.408223e+00  3.209041e+00
##  [217] 2.809858e+00  2.510674e+00  2.411490e+00  2.112304e+00
##  [221] 1.613117e+00  1.413930e+00  1.014741e+00  1.315551e+00
##  [225] 9.163607e-01  1.817169e+00  2.217976e+00  3.718783e+00
##  [229] 4.419588e+00  4.920392e+00  5.121196e+00  5.521998e+00
##  [233] 5.422800e+00  5.723600e+00  5.924399e+00  6.425197e+00
##  [237] 6.825995e+00  6.926791e+00  7.227586e+00  7.328380e+00
##  [241] 7.029173e+00  7.229966e+00  7.730757e+00  7.431547e+00
##  [245] 7.532336e+00  7.633124e+00  7.933911e+00  8.234697e+00
##  [249] 8.135481e+00  8.236265e+00  8.237048e+00  8.237830e+00
##  [253] 8.138610e+00  8.039390e+00  7.740168e+00  7.640946e+00
##  [257] 7.341722e+00  7.042498e+00  7.243272e+00  7.144045e+00
##  [261] 6.744817e+00  6.145588e+00  5.446358e+00  5.447127e+00
##  [265] 5.647895e+00  5.448662e+00  5.849427e+00  5.150192e+00
##  [269] 5.150955e+00  4.951718e+00  4.552479e+00  4.653239e+00
##  [273] 4.953998e+00  5.154756e+00  5.955513e+00  6.256269e+00
##  [277] 6.557024e+00  7.157777e+00  7.658530e+00  7.559281e+00
##  [281] 7.360031e+00  6.860781e+00  6.361529e+00  6.262275e+00
##  [285] 5.863021e+00  5.463766e+00  5.164509e+00  4.565252e+00
##  [289] 4.665993e+00  4.666733e+00  5.167472e+00  5.068210e+00
##  [293] 5.168947e+00  5.569682e+00  5.770416e+00  5.671150e+00
##  [297] 5.671882e+00  5.672613e+00  5.773343e+00  6.274071e+00
##  [301] 6.374799e+00  7.175525e+00  7.476250e+00  7.176974e+00
##  [305] 6.877697e+00  6.678419e+00  5.879139e+00  5.279858e+00
```

```
## [309]   4.780577e+00   5.081294e+00   4.682009e+00   4.282724e+00
## [313]   3.683437e+00   4.384150e+00   4.184861e+00   3.885571e+00
## [317]   3.986279e+00   3.586987e+00   3.787693e+00   3.788398e+00
## [321]   3.689102e+00   3.689805e+00   4.390506e+00   4.091206e+00
## [325]   5.091905e+00   4.692603e+00   4.393300e+00   4.393995e+00
## [329]   3.494689e+00   2.595382e+00   1.896074e+00   1.496764e+00
## [333]   1.097454e+00   6.981418e-01   1.988286e-01   3.995142e-01
## [337]   1.001986e-01  -2.991183e-01  -4.984364e-01  -7.977558e-01
## [341]  -1.297076e+00  -1.296398e+00  -1.195721e+00  -5.950457e-01
## [345]  -2.943713e-01   2.063018e-01  -6.930263e-01   6.076443e-01
## [349]   2.908314e+00   4.608982e+00   4.409649e+00   4.310314e+00
## [353]   3.710978e+00   3.311641e+00   2.812303e+00   2.712964e+00
## [357]   2.113623e+00   1.014281e+00   8.149374e-01  -9.844073e-01
## [361]  -8.375322e-02  -1.831005e-01  -1.824490e-01   3.182012e-01
## [365]   1.188501e-01   6.194976e-01   1.220144e+00   1.820789e+00
## [369]   2.221433e+00   2.222075e+00   2.422716e+00   2.823356e+00
## [373]   3.223994e+00   3.724631e+00   4.325267e+00   4.425902e+00
## [377]   4.526535e+00   3.327167e+00   2.427797e+00   2.828426e+00
## [381]   2.429054e+00   2.629681e+00   2.530306e+00   2.730930e+00
## [385]   2.631552e+00   2.832173e+00   2.932793e+00   2.833412e+00
## [389]   2.934029e+00   3.034645e+00   3.035259e+00   3.135872e+00
## [393]   2.936484e+00   2.837094e+00   2.837703e+00   3.038311e+00
## [397]   3.538917e+00   3.739522e+00   3.540125e+00   3.440728e+00
## [401]   3.241328e+00   2.241928e+00   1.942526e+00   6.431225e-01
## [405]   1.643718e+00   4.443116e-01   4.449041e-01   1.045495e+00
## [409]   1.146085e+00   1.046673e+00   1.047260e+00   1.147846e+00
## [413]   9.484299e-01   1.149013e+00   1.349594e+00   1.750174e+00
## [417]   1.850752e+00   1.951329e+00   2.151905e+00   2.652479e+00
## [421]   2.753052e+00   3.453624e+00   3.754194e+00   3.454762e+00
## [425]   3.255330e+00   3.255895e+00   3.056460e+00   2.957023e+00
## [429]   2.957584e+00   1.958144e+00   7.587025e-01   5.592597e-01
## [433]   5.598154e-01  -3.396304e-01   6.092243e-02  -2.385262e-01
## [437]  -4.379763e-01  -5.374279e-01  -2.368809e-01   2.636647e-01
## [441]   6.420873e-02   3.647513e-01   1.165292e+00   2.365832e+00
## [445]   3.366370e+00   4.366907e+00   5.167442e+00   4.767976e+00
## [449]   4.468509e+00   4.069039e+00   4.169569e+00   4.270097e+00
## [453]   4.670623e+00   5.171148e+00   5.271671e+00   5.272193e+00
## [457]   6.272714e+00   6.673233e+00   6.273750e+00   6.774266e+00
## [461]   6.674780e+00   6.775293e+00   6.675805e+00   6.176315e+00
## [465]   5.976823e+00   6.077330e+00   6.577835e+00   4.578339e+00
## [469]   6.478841e+00   5.579342e+00   5.279841e+00   4.380339e+00
## [473]   3.780835e+00   2.881330e+00   2.981823e+00   3.182315e+00
## [477]   2.582805e+00   2.283294e+00   2.283781e+00   2.384266e+00
## [481]   2.784750e+00   2.485232e+00   2.285713e+00   2.286192e+00
## [485]   2.386670e+00   2.287146e+00   2.387621e+00   2.388094e+00
## [489]   1.488565e+00   1.889035e+00   2.489504e+00   3.489970e+00
## [493]   3.790436e+00   3.890899e+00   3.991361e+00   4.391822e+00
## [497]   4.092281e+00   4.392738e+00   4.093194e+00   4.293648e+00
## [501]   4.694100e+00   4.294551e+00   5.295001e+00   4.995448e+00
## [505]   4.995895e+00   4.896339e+00   4.696782e+00   3.697223e+00
## [509]   2.997663e+00   3.498101e+00   3.198538e+00   4.998973e+00
## [513]   4.899406e+00   4.899838e+00   5.400268e+00   5.700696e+00
## [517]   6.301123e+00   6.801548e+00   7.001972e+00   7.202394e+00
## [521]   7.302814e+00   7.803233e+00   7.103650e+00   6.604065e+00
```

```
## [525]   6.604479e+00   6.304891e+00   5.905302e+00   5.805710e+00
## [529]   5.606118e+00   4.606523e+00   4.106927e+00   3.607329e+00
## [533]   3.307730e+00   3.708129e+00   2.908526e+00   1.608922e+00
## [537]   1.009315e+00   7.097077e-01   1.210098e+00   2.410487e+00
## [541]   2.310874e+00   2.311260e+00   2.011644e+00   1.612026e+00
## [545]   7.124064e-01  -3.872148e-01  -1.386838e+00  -2.186462e+00
## [549]  -1.986088e+00  -2.785716e+00  -3.085346e+00  -3.584977e+00
## [553]  -3.684611e+00  -4.284245e+00  -4.583882e+00  -4.583520e+00
## [557]  -4.983160e+00  -5.382801e+00  -4.882445e+00  -5.382090e+00
## [561]  -4.481736e+00  -3.781385e+00  -3.881035e+00  -2.780687e+00
## [565]  -2.380341e+00  -2.379996e+00  -1.979653e+00  -2.979312e+00
## [569]  -2.378973e+00  -3.178635e+00  -3.278299e+00  -3.077965e+00
## [573]  -2.177632e+00  -2.677301e+00  -2.476972e+00  -2.376645e+00
## [577]  -2.576320e+00  -2.475996e+00  -2.875674e+00  -2.275354e+00
## [581]  -2.475035e+00  -2.874719e+00  -3.674404e+00  -3.574091e+00
## [585]  -3.973779e+00  -4.573470e+00  -4.273162e+00  -3.872856e+00
## [589]  -3.672552e+00  -3.872249e+00  -3.571948e+00  -3.571650e+00
## [593]  -3.871352e+00  -3.371057e+00  -3.370763e+00  -3.370472e+00
## [597]  -3.370182e+00  -3.469894e+00  -3.569607e+00  -3.269323e+00
## [601]  -3.069040e+00  -3.368759e+00  -3.568480e+00  -3.968202e+00
## [605]  -4.367927e+00  -4.267653e+00  -4.467381e+00  -4.867111e+00
## [609]  -5.866843e+00  -5.666577e+00  -5.466312e+00  -5.066049e+00
## [613]  -4.465788e+00  -3.765529e+00  -3.865272e+00  -4.165017e+00
## [617]  -3.664763e+00  -3.064511e+00  -2.264261e+00  -2.364013e+00
## [621]  -2.163767e+00  -2.463523e+00  -2.463280e+00  -2.263039e+00
## [625]  -2.162801e+00  -2.262564e+00  -2.062329e+00  -1.862095e+00
## [629]  -2.161864e+00  -1.961635e+00  -2.161407e+00  -2.561181e+00
## [633]  -2.860957e+00  -2.760735e+00  -2.360515e+00  -1.860297e+00
## [637]  -1.160081e+00  -1.059866e+00  -9.596535e-01  -7.594428e-01
## [641]  -1.159234e+00  -2.459027e+00  -4.158822e+00  -5.258619e+00
## [645]  -6.458418e+00  -7.258218e+00  -8.058021e+00  -8.257825e+00
## [649]  -1.085763e+01  -9.457440e+00  -1.125725e+01  -9.457063e+00
## [653]  -9.156877e+00  -8.156693e+00  -6.056510e+00  -6.656330e+00
## [657]  -7.156152e+00  -6.055976e+00  -4.955801e+00  -4.455629e+00
## [661]  -3.755458e+00  -3.855290e+00  -4.055123e+00  -4.854958e+00
## [665]  -5.354795e+00  -5.154635e+00  -5.154476e+00  -4.754319e+00
## [669]  -4.954164e+00  -4.954011e+00  -4.953860e+00  -4.653710e+00
## [673]  -4.353563e+00  -4.453418e+00  -4.353275e+00  -4.753134e+00
## [677]  -4.852994e+00  -4.852857e+00  -4.952722e+00  -4.852588e+00
## [681]  -4.852457e+00  -4.652327e+00  -3.752200e+00  -3.052074e+00
## [685]  -2.751951e+00  -2.551829e+00  -2.851710e+00  -3.351592e+00
## [689]  -4.051477e+00  -4.451363e+00  -4.751252e+00  -4.251142e+00
## [693]  -4.651035e+00  -4.850929e+00  -4.950826e+00  -4.950724e+00
## [697]  -5.050625e+00  -5.250527e+00  -5.250432e+00  -5.150338e+00
## [701]  -5.450247e+00  -5.350157e+00  -5.450070e+00  -5.649985e+00
## [705]  -5.849901e+00  -5.949820e+00  -6.049741e+00  -5.649664e+00
## [709]  -5.549588e+00  -5.549515e+00  -5.549444e+00  -5.549375e+00
## [713]  -5.749308e+00  -6.149243e+00  -6.349180e+00  -6.449119e+00
## [717]  -6.749061e+00  -6.449004e+00  -6.148949e+00  -6.248896e+00
## [721]  -5.748846e+00  -5.048797e+00  -5.548751e+00  -6.148707e+00
## [725]  -6.448664e+00  -6.448624e+00  -6.348586e+00  -6.048550e+00
## [729]  -6.048516e+00  -5.848484e+00  -5.148454e+00  -5.248426e+00
## [733]  -5.248401e+00  -4.648377e+00  -4.448356e+00  -4.448336e+00
## [737]  -4.448319e+00  -4.248304e+00  -3.948291e+00  -3.748280e+00
```

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## [741] -3.648271e+00 -4.048264e+00 -4.048260e+00 -4.048257e+00
## [745] -4.148257e+00 -4.148258e+00 -4.148262e+00 -4.348268e+00
## [749] -4.148276e+00 -5.448286e+00 -5.148299e+00 -4.248313e+00
## [753] -4.448330e+00 -4.148348e+00 -3.548369e+00 -3.048392e+00
## [757] -2.548417e+00 -2.448445e+00 -2.348474e+00 -2.748506e+00
## [761] -3.348539e+00 -3.648575e+00 -3.648613e+00 -3.448653e+00
## [765] -3.148696e+00 -3.148740e+00 -3.848787e+00 -3.848836e+00
## [769] -4.248887e+00 -4.148940e+00 -4.248995e+00 -4.349053e+00
## [773] -4.249112e+00 -4.049174e+00 -4.049238e+00 -4.149304e+00
## [777] -3.749373e+00 -3.349443e+00 -3.349516e+00 -3.449591e+00
## [781] -3.549668e+00 -3.349748e+00 -3.549829e+00 -3.449913e+00
## [785] -3.549999e+00 -3.750087e+00 -3.850177e+00 -3.850270e+00
## [789] -3.950365e+00 -4.050462e+00 -4.350561e+00 -4.550662e+00
## [793] -4.550766e+00 -4.650872e+00 -4.550980e+00 -4.451090e+00
## [797] -4.351203e+00 -4.251317e+00 -4.151434e+00 -4.051554e+00
## [801] -3.951675e+00 -3.751799e+00 -3.751925e+00 -3.652053e+00
## [805] -3.652183e+00 -3.652316e+00 -3.552451e+00 -3.552588e+00
## [809] -3.752727e+00 -3.752869e+00 -3.753013e+00 -3.953159e+00
## [813] -3.953308e+00 -3.753458e+00 -3.753611e+00 -3.653766e+00
## [817] -3.653924e+00 -3.654084e+00 -3.554246e+00 -3.554410e+00
## [821] -3.454577e+00 -3.254746e+00 -3.054917e+00 -2.755090e+00
## [825] -2.455266e+00 -2.455444e+00 -2.455624e+00 -2.455807e+00
## [829] -2.355992e+00 -2.356179e+00 -2.656369e+00 -2.556561e+00
## [833] -2.656755e+00 -2.856951e+00 -2.757150e+00 -2.657351e+00
## [837] -2.657554e+00 -2.657760e+00 -2.857968e+00 -2.858178e+00
## [841] -2.758391e+00 -2.658606e+00 -2.658823e+00 -2.859043e+00
## [845] -2.959265e+00 -3.059489e+00 -3.259715e+00 -3.259944e+00
## [849] -3.160176e+00 -2.960409e+00 -2.860645e+00 -2.760884e+00
## [853] -2.461124e+00 -2.261367e+00 -2.361613e+00 -2.461860e+00
## [857] -2.562110e+00 -2.562363e+00 -2.562618e+00 -2.462875e+00
## [861] -2.463134e+00 -2.163396e+00 -1.963660e+00 -1.663927e+00
## [865] -1.664196e+00 -1.864467e+00 -1.764741e+00 -1.865017e+00
## [869] -1.865296e+00 -1.865577e+00 -1.765860e+00 -1.766146e+00
## [873] -1.666434e+00 -1.566724e+00 -1.467017e+00 -9.673124e-01
## [877]  2.323900e-01  1.632090e+00  1.631788e+00  1.431483e+00
## [881]  5.311754e-01 -2.691343e-01 -8.694464e-01 -1.369761e+00
## [885] -1.870078e+00 -2.170397e+00 -1.970719e+00 -1.971043e+00
## [889] -2.071370e+00 -3.171699e+00 -3.472030e+00 -3.572364e+00
## [893] -3.572700e+00 -4.273039e+00 -3.273380e+00 -3.873724e+00
## [897] -2.774070e+00 -1.774419e+00 -8.747696e-01 -6.751230e-01
## [901]  2.452114e-02  9.241628e-01  4.238020e-01  2.234388e-01
## [905]  2.230731e-01  2.270494e-02  2.233431e-02  3.219612e-01
## [909]  5.215857e-01  9.212076e-01  1.120827e+00  1.220444e+00
## [913]  1.020059e+00  7.196708e-01  4.192804e-01  7.188875e-01
## [917]  3.184921e-01  2.180942e-01  5.176939e-01  6.172910e-01
## [921]  5.168857e-01  1.016478e+00  1.816068e+00  2.415655e+00
## [925]  2.915239e+00  2.814821e+00  2.714401e+00  2.913978e+00
## [929]  2.913553e+00  2.713125e+00  2.412695e+00  2.512262e+00
## [933]  2.211826e+00  1.311388e+00  9.109478e-01  1.105048e-01
## [937] -4.899407e-01 -9.903888e-01 -2.690839e+00 -4.491293e+00
## [941] -4.391748e+00 -5.192206e+00 -5.392667e+00 -5.893130e+00
## [945] -4.593596e+00 -4.094065e+00 -1.794536e+00  1.304991e+00
## [949]  3.004515e+00  3.704036e+00  4.303555e+00  5.003071e+00
## [953]  5.002585e+00  4.302096e+00  4.401605e+00  4.701111e+00
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##  [957]  4.600614e+00  4.400115e+00  4.399613e+00  5.099109e+00
##  [961]  4.998602e+00  5.098093e+00  5.297581e+00  5.397066e+00
##  [965]  5.196549e+00  4.396029e+00  2.995507e+00  1.894982e+00
##  [969]  1.194454e+00  1.593924e+00  2.093391e+00  2.992856e+00
##  [973]  3.492318e+00  3.991777e+00  4.191234e+00  3.390688e+00
##  [977]  3.390140e+00  1.989589e+00  6.890349e-01 -1.711521e+00
##  [981] -2.812080e+00 -2.812642e+00 -8.132060e-01 -1.013773e+00
##  [985] -1.814342e+00 -1.814914e+00 -1.415489e+00 -2.160664e-01
##  [989] -1.166464e-01 -7.172290e-01 -2.417814e+00 -1.918402e+00
##  [993] -2.118993e+00 -2.019586e+00 -6.201818e-01 -2.207804e-01
##  [997]  2.786184e-01  1.178015e+00  7.774081e-01  1.876799e+00
## [1001]  1.276187e+00 -2.442743e-02 -4.250446e-01 -8.256645e-01
## [1005] -5.262870e-01 -5.269122e-01 -8.275401e-01 -5.281706e-01
## [1009] -7.288039e-01 -1.529440e+00 -1.530078e+00 -1.430720e+00
## [1013] -1.331364e+00 -5.320104e-01 -7.326598e-01 -5.333119e-01
## [1017] -3.396673e-02  1.653758e-01  4.647156e-01  1.164053e+00
## [1021]  1.063387e+00  1.262719e+00  1.562048e+00  2.161374e+00
## [1025]  2.760697e+00  3.460018e+00  4.059336e+00  4.458652e+00
## [1029]  4.757964e+00  4.957274e+00  5.056581e+00  3.755886e+00
## [1033]  2.455188e+00  2.554486e+00  2.553783e+00  2.253076e+00
## [1037]  2.352367e+00  2.451655e+00  1.650940e+00  1.250223e+00
## [1041]  1.049502e+00  9.487794e-01  1.048054e+00  8.473251e-01
## [1045]  1.046594e+00  9.458597e-01  1.045123e+00  1.044383e+00
## [1049]  1.043641e+00  9.428958e-01 -1.578521e-01 -5.860274e-02
## [1053]  2.406438e-01 -6.011243e-02 -1.608715e-01 -1.616333e-01
## [1057] -6.239785e-02 -2.631652e-01 -2.639354e-01 -5.647084e-01
## [1061] -1.165484e+00 -9.662627e-01 -1.767044e+00 -2.567828e+00
## [1065] -2.968615e+00 -1.869405e+00 -4.701975e-01  4.290071e-01
## [1069]  8.282089e-01 -7.259213e-02  6.266040e-01  2.579738e-02
## [1073] -2.750121e-01 -5.758244e-01 -1.676640e+00 -2.777457e+00
## [1077] -2.678278e+00 -2.279102e+00 -2.079928e+00 -2.580758e+00
## [1081] -2.581590e+00 -2.582425e+00 -2.583263e+00 -2.884103e+00
## [1085] -3.284947e+00 -3.285793e+00 -3.786642e+00 -4.287494e+00
## [1089] -4.288349e+00 -3.289207e+00 -2.490068e+00 -1.490931e+00
## [1093] -5.917974e-01 -1.926667e-01 -2.935388e-01 -2.944137e-01
## [1097] -2.952916e-01 -1.196172e+00 -1.697056e+00 -2.697942e+00
## [1101] -3.698832e+00 -3.799724e+00 -4.500619e+00 -5.101517e+00
## [1105] -3.802418e+00 -3.803322e+00 -4.504228e+00 -3.605138e+00
## [1109] -3.506050e+00 -3.106966e+00 -3.807884e+00 -3.108805e+00
## [1113] -2.709729e+00 -2.710656e+00 -2.511586e+00 -2.312519e+00
## [1117] -2.113455e+00 -1.814394e+00 -2.115335e+00 -2.316280e+00
## [1121] -2.917227e+00 -3.218178e+00 -3.219131e+00 -3.120087e+00
## [1125] -2.821046e+00 -2.322008e+00 -2.122973e+00 -2.223941e+00
## [1129] -2.124912e+00 -2.225886e+00 -2.026863e+00 -1.727843e+00
## [1133] -1.828825e+00 -1.729811e+00 -1.630800e+00 -1.631791e+00
## [1137] -1.532786e+00 -1.433783e+00 -1.334784e+00 -1.235787e+00
## [1141] -1.236794e+00 -1.137803e+00 -1.138815e+00 -9.398305e-01
## [1145] -9.408488e-01 -9.418701e-01 -9.428943e-01 -1.043922e+00
## [1149] -1.144952e+00 -9.459849e-01 -1.047021e+00 -1.148060e+00
## [1153] -1.149102e+00 -1.350148e+00 -1.251196e+00 -1.352247e+00
## [1157] -1.353301e+00 -1.454358e+00 -1.755418e+00 -2.056482e+00
## [1161] -1.857548e+00 -1.958617e+00 -1.359689e+00 -1.160765e+00
## [1165] -1.261843e+00 -1.262924e+00 -1.064008e+00 -1.065096e+00
## [1169] -1.466186e+00 -1.867280e+00 -2.468376e+00 -2.969475e+00
```

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## [1173] -2.970578e+00 -2.771683e+00 -3.672792e+00 -3.373904e+00
## [1177] -2.775018e+00 -3.576136e+00 -3.877257e+00 -3.878381e+00
## [1181] -3.879508e+00 -3.680637e+00 -2.881770e+00 -2.982906e+00
## [1185] -2.984046e+00 -2.585188e+00 -1.086333e+00 -1.874813e-01
## [1189]  1.211367e+00  2.010213e+00  2.209055e+00  2.207895e+00
## [1193]  1.906731e+00  8.055642e-01  4.043944e-01 -6.967786e-01
## [1197] -1.797955e+00 -1.699134e+00 -1.700316e+00 -1.301501e+00
## [1201] -1.002690e+00 -1.203881e+00 -1.505076e+00 -2.006273e+00
## [1205] -2.807474e+00 -3.008678e+00 -3.209885e+00 -3.211095e+00
## [1209] -2.912309e+00 -1.113525e+00  1.285255e+00  2.984033e+00
## [1213]  4.082807e+00  4.181578e+00  6.180346e+00  6.079111e+00
## [1217]  4.077873e+00  3.476631e+00  3.175387e+00  2.074139e+00
## [1221]  1.272888e+00  2.071635e+00  2.270377e+00  2.269117e+00
## [1225]  2.678538e-01 -1.033413e+00  6.531761e-02  6.404480e-02
## [1229]  6.627689e-01  1.161490e+00  1.360208e+00  1.658922e+00
## [1233]  1.057634e+00  9.563420e-01  2.155047e+00  3.453749e+00
## [1237]  4.852448e+00  7.451144e+00  7.849837e+00  7.548526e+00
## [1241]  7.247212e+00  6.045896e+00  3.744576e+00  3.543253e+00
## [1245]  3.241927e+00  3.140597e+00  2.539265e+00  3.637929e+00
## [1249]  3.736591e+00  3.635249e+00  3.633904e+00  3.432556e+00
## [1253]  3.531204e+00  3.529850e+00  3.528492e+00  3.627132e+00
## [1257]  3.825768e+00  4.224401e+00  4.423031e+00  4.921658e+00
## [1261]  5.820282e+00  6.318902e+00  7.017520e+00  6.516134e+00
## [1265]  5.714745e+00  5.313353e+00  4.111958e+00  4.010560e+00
## [1269]  3.409159e+00  3.407754e+00  2.206347e+00  1.404936e+00
## [1273]  1.503522e+00  2.102105e+00  1.300685e+00  1.999262e+00
## [1277]  2.097835e+00  2.096406e+00  2.194973e+00  2.493538e+00
## [1281]  3.292099e+00  3.290657e+00  4.789212e+00  5.587764e+00
## [1285]  5.486312e+00  6.284858e+00  6.683400e+00  7.781940e+00
## [1289]  7.780476e+00  7.179009e+00  6.877539e+00  6.376066e+00
## [1293]  6.274590e+00  6.373110e+00  6.371628e+00  6.270142e+00
## [1297]  6.468653e+00  6.567162e+00  6.565667e+00  6.364169e+00
## [1301]  6.462667e+00  6.161163e+00  6.359656e+00  5.758145e+00
## [1305]  3.456632e+00  4.355115e+00  5.253595e+00  6.452072e+00
## [1309]  6.350546e+00  6.949017e+00  6.747484e+00  7.645949e+00
## [1313]  7.344410e+00  6.942869e+00  5.841324e+00  4.139776e+00
## [1317]  4.238225e+00  3.036671e+00  4.035114e+00  4.633554e+00
## [1321]  4.131990e+00  4.030424e+00  3.728854e+00  2.827282e+00
## [1325]  2.625706e+00  1.724127e+00  1.422545e+00  1.320960e+00
## [1329]  2.119371e+00  2.617780e+00  3.816186e+00  5.314588e+00
## [1333]  7.312987e+00  8.911384e+00  9.809777e+00  1.010817e+01
## [1337]  1.010655e+01  8.404938e+00  6.503318e+00  4.701696e+00
## [1341]  3.400071e+00  2.198442e+00  1.696810e+00  9.517572e-02
## [1345] -6.462124e-03  6.918969e-01  1.902529e-01 -1.611394e+00
## [1349]  6.869556e-01 -9.146978e-01 -2.016354e+00 -2.218014e+00
## [1353]  8.803237e-01  3.378658e+00  5.076989e+00  6.975317e+00
## [1357]  8.173642e+00  8.871964e+00  9.470283e+00  9.268599e+00
## [1361]  8.966911e+00  8.765221e+00  6.863528e+00  4.961831e+00
## [1365]  4.260131e+00  2.258428e+00  1.156723e+00 -1.449865e-01
## [1369] -2.466985e-01  1.151586e+00  1.349868e+00  1.848147e+00
## [1373]  1.846422e+00  2.044695e+00  1.942964e+00  1.841231e+00
## [1377]  2.239494e+00  3.237754e+00  4.636011e+00  5.934265e+00
## [1381]  6.632516e+00  7.030764e+00  7.229009e+00  6.727250e+00
## [1385]  6.125489e+00  4.623724e+00  2.121957e+00  1.220186e+00
```

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## [1389]   2.918412e+00   2.716635e+00   2.214855e+00   2.213073e+00
## [1393]   2.211286e+00   2.109497e+00   2.107705e+00   1.905910e+00
## [1397]   8.041114e-01   1.023099e-01   1.000505e+00   8.986978e-01
## [1401]   6.968871e-01  -1.049267e-01   9.325650e-02   9.914366e-01
## [1405]   2.489614e+00   2.887788e+00   3.185958e+00   3.184126e+00
## [1409]   3.282291e+00   2.780453e+00   1.078611e+00  -6.232334e-01
## [1413]  -1.925081e+00  -1.926932e+00  -8.287853e-01   5.693580e-01
## [1417]   4.674981e-01   5.656352e-01   4.637692e-01  -7.380999e-01
## [1421]  -6.399720e-01  -1.241847e+00   1.562746e-01   4.543932e-01
## [1425]   7.525089e-01   2.250621e+00   3.448731e+00   4.546837e+00
## [1429]   6.144941e+00   7.243041e+00   8.841138e+00   9.339232e+00
## [1433]   9.037323e+00   8.335411e+00   7.433496e+00   6.431578e+00
## [1437]   4.529657e+00   1.727733e+00   9.258056e-01   2.238752e-01
## [1441]  -3.780582e-01  -2.799946e-01  -7.819342e-01  -6.838768e-01
## [1445]  -1.385822e+00  -2.587771e+00  -2.289723e+00  -1.991678e+00
## [1449]  -2.193636e+00  -3.955965e-01   1.302440e+00   2.700472e+00
## [1453]   4.298502e+00   4.796529e+00   4.894553e+00   5.292574e+00
## [1457]   5.690591e+00   4.688606e+00   3.286618e+00   4.846261e-01
## [1461]  -1.417368e+00  -1.919366e+00  -2.121367e+00  -3.523370e+00
## [1465]  -2.725377e+00  -3.427387e+00  -5.529400e+00  -6.031416e+00
## [1469]  -6.633435e+00  -7.135457e+00  -7.337482e+00  -6.839510e+00
## [1473]  -6.941541e+00  -3.643575e+00   1.543877e-01   3.852347e+00
## [1477]   5.550304e+00   6.348258e+00   6.246208e+00   6.344156e+00
## [1481]   5.842100e+00   4.840042e+00   2.437980e+00   1.035916e+00
## [1485]  -2.661521e-01  -1.368223e+00  -1.270297e+00  -1.172373e+00
## [1489]  -9.744533e-01  -1.576536e+00  -1.878622e+00  -1.880711e+00
## [1493]  -2.182803e+00  -2.284898e+00  -2.486996e+00  -2.489097e+00
## [1497]  -1.691202e+00  -9.330880e-02   1.304581e+00   2.602468e+00
## [1501]   3.100351e+00   3.898232e+00   3.596110e+00   2.893984e+00
## [1505]   2.791856e+00   1.389725e+00  -2.124099e-01  -1.314547e+00
## [1509]  -1.216688e+00  -1.118831e+00  -9.209778e-01  -6.231273e-01
## [1513]  -1.025280e+00  -1.627435e+00  -1.929594e+00  -1.731755e+00
## [1517]  -1.733920e+00  -2.436088e+00  -2.438258e+00  -2.840432e+00
## [1521]  -1.542608e+00  -2.447878e-01   2.053030e+00   3.650844e+00
## [1525]   5.048656e+00   5.946464e+00   6.544269e+00   6.242072e+00
## [1529]   5.239871e+00   3.637668e+00   1.335461e+00  -1.166748e+00
## [1533]  -2.668960e+00  -2.471176e+00  -2.473394e+00  -2.475616e+00
## [1537]  -2.077840e+00  -1.780067e+00  -1.682298e+00  -2.084531e+00
## [1541]  -2.386767e+00  -2.589006e+00  -2.791249e+00  -3.193494e+00
## [1545]  -2.495742e+00  -1.497993e+00   4.997527e-01   2.197496e+00
## [1549]   3.295236e+00   3.592973e+00   3.590707e+00   2.988438e+00
## [1553]   1.586166e+00  -2.161089e-01  -2.018387e+00  -3.420667e+00
## [1557]  -3.722951e+00  -3.825238e+00  -4.127527e+00  -3.829820e+00
## [1561]  -4.532116e+00  -5.334414e+00  -5.336715e+00  -5.639020e+00
## [1565]  -5.741327e+00  -5.443637e+00  -4.745951e+00  -4.748267e+00
## [1569]  -4.850586e+00  -3.952908e+00  -3.555233e+00  -2.657561e+00
## [1573]  -2.559892e+00  -1.462226e+00  -1.264563e+00  -1.566902e+00
## [1577]  -1.869245e+00  -2.871591e+00  -4.473939e+00  -4.376291e+00
## [1581]  -4.378645e+00  -4.281003e+00  -3.683363e+00  -3.685726e+00
## [1585]  -3.488093e+00  -3.790462e+00  -3.892834e+00  -3.795209e+00
## [1589]  -4.297587e+00  -4.199968e+00  -4.202352e+00  -4.404739e+00
## [1593]  -4.307129e+00  -3.309521e+00  -3.311917e+00  -2.314316e+00
## [1597]  -2.716717e+00  -2.019122e+00  -1.421529e+00  -2.423940e+00
## [1601]  -3.426353e+00  -4.328770e+00  -5.131189e+00  -4.633611e+00
```

```
## [1605] -4.636036e+00 -4.638465e+00 -4.740896e+00 -4.743330e+00
## [1609] -4.845767e+00 -5.048207e+00 -5.050649e+00 -5.153095e+00
## [1613] -5.555544e+00 -5.457996e+00 -5.260450e+00 -5.362908e+00
## [1617] -5.565369e+00 -4.867832e+00 -3.970299e+00 -3.672768e+00
## [1621] -2.175241e+00 -1.877716e+00 -7.801942e-01 -1.482675e+00
## [1625] -1.285160e+00 -2.087647e+00 -2.390137e+00 -2.692630e+00
## [1629] -2.795126e+00 -3.397625e+00 -3.200127e+00 -3.202632e+00
## [1633] -4.305139e+00 -4.707650e+00 -4.910164e+00 -4.812680e+00
## [1637] -4.615200e+00 -4.617723e+00 -4.620248e+00 -4.422777e+00
## [1641] -4.425308e+00 -4.427842e+00 -3.730380e+00 -2.832920e+00
## [1645] -2.035463e+00 -8.380093e-01 -1.340558e+00 -1.243111e+00
## [1649] -1.345666e+00 -2.048224e+00 -3.150785e+00 -3.953348e+00
## [1653] -4.555915e+00 -4.058485e+00 -4.061058e+00 -4.063634e+00
## [1657] -4.066212e+00 -4.068794e+00 -4.071378e+00 -3.973966e+00
## [1661] -4.176557e+00 -4.479150e+00 -4.981746e+00 -5.684346e+00
## [1665] -4.286948e+00 -1.989553e+00 -1.692162e+00 -8.947727e-01
## [1669]  9.026131e-01  1.699996e+00  1.997376e+00  2.294753e+00
## [1673]  2.492127e+00  2.489498e+00  2.086866e+00  1.284231e+00
## [1677]  6.815935e-01 -2.104724e-02 -2.236910e-01 -7.263376e-01
## [1681] -9.289873e-01 -1.431640e+00 -1.534295e+00 -1.436954e+00
## [1685] -1.239615e+00 -1.142280e+00 -1.244947e+00 -1.947617e+00
## [1689] -1.050291e+00 -4.529670e-01  4.443537e-01  1.141672e+00
## [1693]  1.238986e+00  1.536298e+00  1.933607e+00  1.930913e+00
## [1697]  7.282163e-01  5.255164e-01  2.281349e-02 -4.798924e-01
## [1701] -5.826012e-01 -8.853129e-01 -8.880277e-01 -8.907454e-01
## [1705] -9.934660e-01 -1.096190e+00 -1.098916e+00 -1.401646e+00
## [1709] -1.604378e+00 -1.607114e+00 -1.809852e+00 -1.712594e+00
## [1713] -1.115338e+00 -6.180852e-01 -3.208354e-01  6.764113e-01
## [1717]  1.273655e+00  2.570896e+00  2.268134e+00  2.665369e+00
## [1721]  1.962601e+00  7.598297e-01  1.570558e-01 -7.457212e-01
## [1725] -9.485011e-01 -1.651284e+00 -1.354070e+00 -1.256859e+00
## [1729] -8.596503e-01 -7.624450e-01 -1.265243e+00 -1.068043e+00
## [1733] -9.708470e-01 -1.373654e+00 -9.764631e-01 -9.792756e-01
## [1737] -1.282091e+00 -1.384909e+00 -1.587731e+00 -1.490555e+00
## [1741] -1.593383e+00 -1.496213e+00 -1.399046e+00 -1.601882e+00
## [1745] -1.704722e+00 -1.707564e+00 -1.510409e+00 -1.613257e+00
## [1749] -1.516108e+00 -1.318962e+00 -1.421819e+00 -1.324679e+00
## [1753] -8.275418e-01 -8.304077e-01 -1.033277e+00 -9.361484e-01
## [1757] -8.390232e-01 -1.241901e+00 -1.244782e+00 -1.447665e+00
## [1761] -1.250552e+00 -9.534417e-01 -8.563343e-01 -8.592298e-01
## [1765] -4.621284e-01 -4.650299e-01 -7.679344e-01 -3.708418e-01
## [1769] -1.737522e-01 -3.766656e-01 -5.795819e-01 -7.825012e-01
## [1773] -6.854235e-01 -8.883488e-01 -7.912770e-01 -1.094208e+00
## [1777] -1.197142e+00 -1.600080e+00 -1.803020e+00 -2.005963e+00
## [1781] -2.108909e+00 -2.011858e+00 -2.014810e+00 -1.817765e+00
## [1785] -1.120723e+00 -3.236835e-01  9.733526e-01  9.703858e-01
## [1789]  9.674159e-01  1.364443e+00  1.361467e+00  1.858489e+00
## [1793]  1.855507e+00  1.152522e+00 -1.504654e-01 -8.534560e-01
## [1797] -7.564496e-01 -5.594461e-01 -6.624457e-01 -6.654482e-01
## [1801] -5.684536e-01 -5.714621e-01 -5.744735e-01 -4.774879e-01
## [1805] -5.805053e-01 -7.835256e-01 -1.086549e+00 -1.389575e+00
## [1809] -1.392605e+00 -1.195637e+00 -1.398672e+00 -1.301710e+00
## [1813] -1.304751e+00 -1.307795e+00 -1.110843e+00 -1.313893e+00
## [1817] -1.416946e+00 -1.620002e+00 -1.823061e+00 -2.026123e+00
```

```
## [1821] -2.229188e+00 -2.232256e+00 -2.135327e+00 -2.138401e+00
## [1825] -2.241477e+00 -2.244557e+00 -2.247640e+00 -2.250726e+00
## [1829] -2.153815e+00 -2.156906e+00 -2.160001e+00 -2.163099e+00
## [1833] -1.766199e+00 -1.469303e+00 -9.724098e-01 -6.755194e-01
## [1837] -7.786320e-01 -5.817475e-01 -2.848661e-01 -5.879876e-01
## [1841] -5.911121e-01 -6.942396e-01 -5.973701e-01 -6.005035e-01
## [1845] -7.036399e-01 -5.067793e-01 -6.099217e-01 -8.130670e-01
## [1849] -8.162153e-01 -9.193667e-01 -1.022521e+00 -1.125678e+00
## [1853] -1.228838e+00 -1.232002e+00 -1.235168e+00 -1.138337e+00
## [1857] -9.415092e-01 -7.446844e-01 -4.478625e-01 -5.510436e-01
## [1861] -1.542277e-01 -1.574148e-01  8.393952e-01  9.362022e-01
## [1865]  1.533006e+00 -3.701928e-01 -1.373395e+00 -3.076600e+00
## [1869] -3.679808e+00 -4.183019e+00 -5.086233e+00 -5.289449e+00
## [1873] -5.592669e+00 -5.495892e+00 -6.199118e+00 -4.602347e+00
## [1877] -5.905579e+00 -6.008813e+00 -6.212051e+00 -6.015292e+00
## [1881] -5.418536e+00 -3.621782e+00 -1.725032e+00 -2.228285e+00
## [1885] -1.731540e+00 -1.534799e+00 -1.538060e+00 -1.541325e+00
## [1889] -1.144593e+00 -1.747863e+00 -2.351137e+00 -3.754413e+00
## [1893] -3.557693e+00 -4.760975e+00 -6.564261e+00 -5.967549e+00
## [1897] -5.670841e+00 -4.974135e+00 -4.377433e+00 -5.080733e+00
## [1901] -5.984037e+00 -6.087343e+00 -6.890652e+00 -5.893965e+00
## [1905] -3.897280e+00 -2.100598e+00 -7.039197e-01  7.927560e-01
## [1909]  1.389429e+00  1.986098e+00  1.882765e+00  1.679429e+00
## [1913]  1.676090e+00  1.727474e-01 -1.630598e+00 -3.233946e+00
## [1917] -4.137297e+00 -4.140651e+00 -4.144009e+00 -4.247369e+00
## [1921] -4.250732e+00 -4.354098e+00 -4.657467e+00 -5.060839e+00
## [1925] -5.164214e+00 -4.867592e+00 -4.670974e+00 -4.374358e+00
## [1929] -2.577745e+00 -9.811347e-01 -3.845277e-01  1.412076e+00
## [1933]  1.908677e+00  2.405275e+00  2.301870e+00  1.398462e+00
## [1937]  1.950513e-01 -9.083626e-01 -1.511780e+00 -1.715200e+00
## [1941] -1.718622e+00 -1.822048e+00 -2.425477e+00 -2.828909e+00
## [1945] -3.132344e+00 -4.035782e+00 -4.739223e+00 -4.742667e+00
## [1949] -4.946114e+00 -5.149563e+00 -5.053016e+00 -4.656472e+00
## [1953] -4.359931e+00 -3.963393e+00 -3.266858e+00 -2.270325e+00
## [1957] -2.773796e+00 -2.077270e+00 -2.580747e+00 -2.684227e+00
## [1961] -3.287709e+00 -4.391195e+00 -5.394684e+00 -5.598176e+00
## [1965] -5.501670e+00 -5.305168e+00 -5.008669e+00 -5.112173e+00
## [1969] -5.115679e+00 -5.219189e+00 -4.922702e+00 -4.726217e+00
## [1973] -4.629736e+00 -4.733258e+00 -4.536782e+00 -4.540310e+00
## [1977] -4.143841e+00 -4.047374e+00 -3.650911e+00 -3.454451e+00
## [1981] -3.957993e+00 -2.961539e+00 -3.265088e+00 -3.368639e+00
## [1985] -3.772194e+00 -3.775752e+00 -4.179312e+00 -4.582876e+00
## [1989] -4.586443e+00 -4.690012e+00 -4.993585e+00 -4.797160e+00
## [1993] -4.900739e+00 -4.904321e+00 -5.007905e+00 -4.811493e+00
## [1997] -4.715083e+00 -4.918677e+00 -5.122274e+00 -5.625873e+00
## [2001] -4.829476e+00 -3.833081e+00 -2.036690e+00 -1.440302e+00
## [2005] -1.343916e+00 -1.475338e-01  6.488457e-01  1.645222e+00
## [2009]  2.141595e+00  2.237966e+00  2.034333e+00  1.530698e+00
## [2013]  1.127059e+00  1.423418e+00  1.319773e+00  1.216125e+00
## [2017]  1.212475e+00  1.708821e+00  1.905165e+00  2.101505e+00
## [2021]  1.897843e+00  1.594177e+00  1.590508e+00  1.786837e+00
## [2025]  2.683162e+00  3.279485e+00  4.375804e+00  5.472120e+00
## [2029]  5.768434e+00  5.864744e+00  6.161052e+00  7.257356e+00
## [2033]  6.453657e+00  6.149956e+00  6.046251e+00  5.442544e+00
```

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## [2037]  4.138833e+00  4.135119e+00  3.831403e+00  3.827683e+00
## [2041]  3.923961e+00  4.020235e+00  3.916506e+00  3.812775e+00
## [2045]  3.409040e+00  3.005302e+00  2.701562e+00  2.497818e+00
## [2049]  2.494071e+00  2.590322e+00  2.986569e+00  3.482813e+00
## [2053]  3.779055e+00  4.175293e+00  2.971528e+00  4.567761e+00
## [2057]  3.563990e+00  3.860216e+00  2.556440e+00  1.152660e+00
## [2061]  5.488773e-01 -5.490845e-02 -1.258697e+00 -1.562489e+00
## [2065] -1.566284e+00 -9.700814e-01 -1.073882e+00 -8.776859e-01
## [2069] -2.814926e-01  1.469760e-02  4.108848e-01  8.070690e-01
## [2073]  1.603250e+00  2.299428e+00  3.295604e+00  5.591776e+00
## [2077]  5.687945e+00  5.584111e+00  5.780274e+00  5.976435e+00
## [2081]  6.072592e+00  5.468746e+00  5.164897e+00  4.661045e+00
## [2085]  4.157190e+00  3.853332e+00  3.149471e+00  2.245608e+00
## [2089]  1.241741e+00 -1.621293e-01 -1.066002e+00 -1.369878e+00
## [2093] -2.173757e+00 -1.577639e+00 -8.815241e-01 -8.541211e-02
## [2097]  1.510697e+00  3.106803e+00  3.802906e+00  4.699006e+00
## [2101]  6.795103e+00  8.391197e+00  8.287288e+00  8.783376e+00
## [2105]  8.279461e+00  6.775542e+00  5.171621e+00  3.667697e+00
## [2109]  2.463770e+00  1.459840e+00  7.559068e-01 -1.480294e-01
## [2113] -8.519685e-01 -1.255911e+00 -1.059856e+00 -1.563804e+00
## [2117] -1.067755e+00 -9.717096e-01 -3.756669e-01 -7.962714e-02
## [2121]  8.164096e-01  2.412443e+00  4.008474e+00  4.204502e+00
## [2125]  4.500526e+00  4.696548e+00  4.692567e+00  6.088582e+00
## [2129]  5.784595e+00  4.880604e+00  4.476611e+00  3.872615e+00
## [2133]  3.368615e+00  2.564613e+00  2.260607e+00  1.456599e+00
## [2137]  1.552587e+00  1.548573e+00  1.344555e+00  1.440535e+00
## [2141]  7.365110e-01  6.324845e-01  2.284549e-01  2.442224e-02
## [2145]  1.720387e+00  2.716348e+00  2.212306e+00  3.108262e+00
## [2149]  3.004214e+00  3.600163e+00  6.196109e+00  5.592053e+00
## [2153]  4.687993e+00  4.683930e+00  4.579864e+00  3.675796e+00
## [2157]  3.971724e+00  3.767649e+00  3.663571e+00  2.759490e+00
## [2161]  2.455406e+00  1.751319e+00  1.647229e+00  1.143136e+00
## [2165]  6.390403e-01 -2.650587e-01 -5.691607e-01  2.673428e-02
## [2169]  2.122626e+00  3.518515e+00  5.814401e+00  5.610284e+00
## [2173]  6.606164e+00  6.502041e+00  6.997914e+00  7.793785e+00
## [2177]  7.489653e+00  6.985518e+00  6.481380e+00  5.577238e+00
## [2181]  4.473094e+00  3.568947e+00  3.264796e+00  2.660643e+00
## [2185]  2.656487e+00  2.152327e+00  1.348165e+00  7.439993e-01
## [2189]  1.398308e-01 -4.643407e-01 -9.685152e-01 -6.726928e-01
## [2193]  1.231267e-01  9.189431e-01  1.714757e+00  2.810567e+00
## [2197]  3.606374e+00  5.102179e+00  4.897980e+00  4.693778e+00
## [2201]  4.689573e+00  4.185366e+00  3.481155e+00  3.076941e+00
## [2205]  1.572724e+00  2.068504e+00  2.164281e+00  2.060056e+00
## [2209]  1.855827e+00  1.551595e+00  1.247360e+00  9.431217e-01
## [2213]  3.388806e-01  6.346366e-01  6.303895e-01  8.261394e-01
## [2217]  1.321886e+00  2.417630e+00  3.213371e+00  3.809109e+00
## [2221]  2.104843e+00  1.700575e+00  1.896304e+00  2.492030e+00
## [2225]  1.687752e+00  1.383472e+00  4.791885e-01 -1.825098e+00
## [2229] -2.329387e+00 -2.033680e+00 -2.137975e+00 -2.242274e+00
## [2233] -2.546575e+00 -2.550880e+00 -3.355188e+00 -4.259498e+00
## [2237] -5.263812e+00 -5.668129e+00 -5.972448e+00 -4.876771e+00
## [2241] -2.781097e+00 -1.285426e+00 -5.897574e-01  1.005908e+00
## [2245]  2.101570e+00  2.597229e+00  3.692885e+00  3.888538e+00
## [2249]  3.584188e+00  2.979835e+00  2.075479e+00  6.711198e-01
```

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## [2253] -1.133242e+00 -1.737607e+00 -3.441976e+00 -3.546347e+00
## [2257] -3.250721e+00 -3.955098e+00 -3.759479e+00 -3.463862e+00
## [2261] -2.568248e+00 -2.272637e+00 -2.377030e+00 -1.781425e+00
## [2265] -5.858236e-01  1.209775e+00  1.405371e+00  3.000963e+00
## [2269]  5.096553e+00  3.592139e+00  5.687723e+00  5.283303e+00
## [2273]  5.178881e+00  4.974456e+00  4.070027e+00  2.265596e+00
## [2277]  1.161161e+00  5.567240e-01 -6.477164e-01 -2.652160e+00
## [2281] -3.356606e+00 -2.461055e+00 -3.565508e+00 -5.869963e+00
## [2285] -5.374421e+00 -4.978882e+00 -3.883346e+00 -3.087813e+00
## [2289] -7.922835e-01  2.003243e+00  3.498767e+00  4.094289e+00
## [2293]  4.289807e+00  4.385322e+00  5.480834e+00  6.476343e+00
## [2297]  7.471850e+00  7.567353e+00  6.562854e+00  5.858351e+00
## [2301]  5.353846e+00  5.149338e+00  4.444826e+00  3.840312e+00
## [2305]  3.535795e+00  3.431275e+00  3.426752e+00  3.622226e+00
## [2309]  4.117698e+00  3.913166e+00  3.908631e+00  3.804094e+00
## [2313]  4.099554e+00  4.695010e+00  5.390464e+00  6.585915e+00
## [2317]  6.581363e+00  6.276808e+00  5.672251e+00  2.867690e+00
## [2321]  1.963127e+00  1.658561e+00  1.153991e+00  1.049419e+00
## [2325]  1.044844e+00  3.402667e-01 -2.643139e-01 -1.968897e+00
## [2329] -2.173484e+00 -2.778073e+00 -3.282665e+00 -3.787260e+00
## [2333] -3.491857e+00 -3.196458e+00 -2.601061e+00 -1.905667e+00
## [2337] -1.110276e+00 -1.414888e+00 -1.719503e+00 -2.241199e-01
## [2341]  1.171260e+00  2.166637e+00  1.562011e+00  4.573823e-01
## [2345] -1.472491e-01 -2.518834e-01 -1.056520e+00 -2.261160e+00
## [2349] -2.965803e+00 -3.270448e+00 -3.575096e+00 -3.579747e+00
## [2353] -4.084401e+00 -5.289057e+00 -5.693717e+00 -6.798379e+00
## [2357] -7.603043e+00 -8.207711e+00 -7.712381e+00 -6.817054e+00
## [2361] -3.221730e+00 -1.626409e+00 -3.310898e-01  6.642262e-01
## [2365]  1.359539e+00  1.254850e+00  2.350158e+00  2.945463e+00
## [2369]  2.640765e+00  2.536065e+00  1.831362e+00  1.726656e+00
## [2373]  1.821947e+00  9.172363e-01  1.125224e-01 -3.921942e-01
## [2377] -1.896914e+00 -2.801636e+00 -3.906360e+00 -3.211088e+00
## [2381] -4.315818e+00 -4.420550e+00 -4.125286e+00 -3.230024e+00
## [2385] -1.234765e+00  3.604918e-01  1.355746e+00  2.250997e+00
## [2389]  2.946246e+00  2.741491e+00  2.836735e+00  3.231975e+00
## [2393]  4.027213e+00  4.322449e+00  3.017681e+00  1.412911e+00
## [2397]  1.408139e+00  9.033636e-01  7.985857e-01  4.938053e-01
## [2401]  2.890222e-01 -1.315764e+00 -2.220552e+00 -3.025343e+00
## [2405] -3.930136e+00 -4.134933e+00 -4.939731e+00 -3.044533e+00
## [2409]  8.506634e-01  3.045857e+00  3.741048e+00  4.936236e+00
## [2413]  7.031422e+00  6.626605e+00  6.721785e+00  7.216963e+00
## [2417]  6.912139e+00  7.007312e+00  6.202482e+00  5.497649e+00
## [2421]  4.792815e+00  1.487977e+00  1.383137e+00  1.178295e+00
## [2425] -3.265503e-01 -9.313980e-01 -2.436248e+00 -1.341101e+00
## [2429] -3.745956e+00 -4.350814e+00 -4.355674e+00 -1.160537e+00
## [2433]  1.434598e+00  2.629730e+00  3.824860e+00  3.519987e+00
## [2437]  4.415112e+00  5.110234e+00  4.905354e+00  4.600471e+00
## [2441]  4.595586e+00  3.690698e+00  3.585808e+00  2.580915e+00
## [2445]  1.276020e+00 -1.228877e+00 -1.733777e+00 -2.038680e+00
## [2449] -2.043585e+00 -2.348492e+00 -2.053401e+00 -1.758314e+00
## [2453] -2.263228e+00 -2.168145e+00 -1.973064e+00 -7.779859e-01
## [2457]  9.170900e-01  2.412164e+00  2.907235e+00  2.202303e+00
## [2461]  1.397370e+00  8.924339e-01  8.749553e-02  8.255485e-02
## [2465] -2.223882e-01 -7.273336e-01 -8.322813e-01 -1.237231e+00
```

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## [2469] -1.442184e+00 -1.447138e+00 -1.452095e+00 -1.557055e+00
## [2473] -1.662016e+00 -1.866980e+00 -1.971947e+00 -2.176915e+00
## [2477] -2.181886e+00 -2.086859e+00 -1.791835e+00 -1.296812e+00
## [2481] -9.017921e-01  3.932257e-01  1.988241e+00  3.583254e+00
## [2485]  5.078266e+00  5.773274e+00  5.768281e+00  5.363285e+00
## [2489]  4.858287e+00  4.253287e+00  1.848285e+00  4.432803e-01
## [2493]  3.382735e-01  2.332645e-01  2.825337e-02 -2.767600e-01
## [2497] -3.817755e-01 -4.867933e-01 -3.918132e-01 -4.968352e-01
## [2501] -6.018595e-01 -1.006886e+00 -1.811914e+00 -1.916945e+00
## [2505] -1.621978e+00 -1.527013e+00 -1.232050e+00 -9.370894e-01
## [2509] -1.342131e+00 -1.247174e+00 -7.522200e-01 -7.572677e-01
## [2513] -5.623175e-01 -6.673695e-01 -1.072424e+00 -1.077480e+00
## [2517] -9.825379e-01 -1.087598e+00 -1.192661e+00 -1.297725e+00
## [2521] -1.402791e+00 -1.607860e+00 -1.612931e+00 -1.718003e+00
## [2525] -1.523078e+00 -1.628155e+00 -1.633234e+00 -9.383144e-01
## [2529] -3.433973e-01  8.515179e-01  1.846431e+00  8.413421e-01
## [2533]  2.036251e+00  1.831158e+00  1.426063e+00  1.520967e+00
## [2537]  2.158677e-01 -1.289233e+00 -1.894336e+00 -2.199441e+00
## [2541] -2.604547e+00 -2.909656e+00 -2.514767e+00 -2.519879e+00
## [2545] -2.824994e+00 -2.930110e+00 -2.735229e+00 -2.840349e+00
## [2549] -2.645471e+00 -3.150596e+00 -3.055722e+00 -3.160850e+00
## [2553] -2.765980e+00 -2.371111e+00 -1.976245e+00 -1.481381e+00
## [2557] -5.865180e-01  7.083427e-01  1.703201e+00  2.698058e+00
## [2561]  3.692913e+00  3.387767e+00  1.982618e+00  5.774676e-01
## [2565] -1.127685e+00 -2.632839e+00 -3.937995e+00 -5.043153e+00
## [2569] -4.648312e+00 -4.753474e+00 -4.858637e+00 -5.163802e+00
## [2573] -5.368969e+00 -5.374138e+00 -5.279308e+00 -4.984480e+00
## [2577] -3.789654e+00 -2.894830e+00 -2.100008e+00 -5.186944e-03
## [2581]  3.189632e+00  4.784449e+00  6.179265e+00  6.974078e+00
## [2585]  7.068890e+00  7.663700e+00  7.258509e+00  6.453316e+00
## [2589]  5.348121e+00  4.942924e+00  4.637726e+00  4.332525e+00
## [2593]  4.027324e+00  3.522120e+00  3.516915e+00  2.911708e+00
## [2597]  3.206500e+00  2.601289e+00  2.596078e+00  2.290864e+00
## [2601]  2.785649e+00  2.980432e+00  3.675213e+00  4.469993e+00
## [2605]  5.264772e+00  6.059548e+00  6.454323e+00  6.749096e+00
## [2609]  6.543868e+00  6.238638e+00  5.733407e+00  4.628174e+00
## [2613]  4.222939e+00  3.517703e+00  2.312465e+00  8.072254e-01
## [2617]  9.019844e-01  1.396742e+00  1.191498e+00  1.086252e+00
## [2621]  1.081005e+00  5.757559e-01  7.705055e-01  1.965254e+00
## [2625]  2.360000e+00  4.254745e+00  5.549489e+00  6.344231e+00
## [2629]  6.238971e+00  6.433710e+00  6.828447e+00  6.223183e+00
## [2633]  5.217918e+00  4.312651e+00  2.207382e+00  6.021119e-01
## [2637] -1.003160e+00 -1.708433e+00 -2.213707e+00 -2.418984e+00
## [2641] -2.524261e+00 -2.729540e+00 -2.934821e+00 -2.740103e+00
## [2645] -2.745386e+00 -2.850671e+00 -2.255958e+00 -6.612455e-01
## [2649]  1.533465e+00  3.528174e+00  5.522882e+00  6.017588e+00
## [2653]  6.512293e+00  7.206996e+00  6.901698e+00  5.996399e+00
## [2657]  5.691098e+00  4.785795e+00  3.180492e+00  7.751863e-01
## [2661] -1.030120e+00 -1.835429e+00 -2.040738e+00 -2.446049e+00
## [2665] -2.551361e+00 -1.856675e+00 -2.861990e+00 -2.667307e+00
## [2669] -2.472625e+00 -2.377945e+00 -1.983265e+00 -2.088588e+00
## [2673] -1.393911e+00 -3.992362e-01 -1.045626e-01 -4.098904e-01
## [2677] -5.152196e-01 -1.020550e+00 -7.258820e-01 -1.131215e+00
## [2681] -1.136550e+00 -1.441886e+00 -2.147223e+00 -2.552562e+00
```

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```
## [2685] -2.457902e+00 -2.563244e+00 -2.768587e+00 -2.873931e+00
## [2689] -3.179276e+00 -3.084623e+00 -3.189971e+00 -3.995321e+00
## [2693] -4.900672e+00 -5.506024e+00 -4.611378e+00 -2.816732e+00
## [2697] -1.622089e+00 -8.274462e-01 -1.132805e+00  4.618348e-01
## [2701]  2.564733e-01  3.511105e-01  9.457465e-01 -1.559619e+00
## [2705] -9.649856e-01 -1.470354e+00 -1.975723e+00 -3.281093e+00
## [2709] -4.086465e+00 -4.591839e+00 -4.897213e+00 -5.302589e+00
## [2713] -5.307966e+00 -5.313344e+00 -5.618723e+00 -4.824104e+00
## [2717] -6.029486e+00 -5.634870e+00 -4.740254e+00 -3.445640e+00
## [2721] -3.451027e+00 -4.756416e+00 -3.661805e+00 -1.567196e+00
## [2725] -1.725882e-01 -1.177982e+00 -9.833762e-01 -1.188772e+00
## [2729] -1.094169e+00 -2.399567e+00 -2.304967e+00 -3.410368e+00
## [2733] -4.415770e+00 -5.221173e+00 -5.726577e+00 -6.031983e+00
## [2737] -5.737389e+00 -6.142797e+00 -6.648207e+00 -6.953617e+00
## [2741] -6.759029e+00 -6.864441e+00 -5.869855e+00 -3.975271e+00
## [2745] -2.880687e+00 -1.886105e+00 -1.391523e+00  3.030569e-01
## [2749] -5.023642e-01  3.922136e-01  1.867901e-01 -1.863443e-02
## [2753] -6.240602e-01 -8.294871e-01 -1.734915e+00 -3.240344e+00
## [2757] -3.245775e+00 -3.051206e+00 -3.156639e+00 -2.862073e+00
## [2761] -2.867508e+00 -2.872944e+00 -2.778381e+00 -3.083819e+00
## [2765] -3.189259e+00 -3.194699e+00 -3.000141e+00 -3.105584e+00
## [2769] -2.911028e+00 -2.516473e+00 -1.921919e+00 -1.127366e+00
## [2773] -7.328145e-01 -1.038264e+00 -1.043715e+00 -7.491662e-01
## [2777] -1.454619e+00 -1.960073e+00 -2.765528e+00 -3.470984e+00
## [2781] -3.776441e+00 -3.981899e+00 -4.087358e+00 -4.092819e+00
## [2785] -4.098280e+00 -4.303742e+00 -4.309206e+00 -4.314671e+00
## [2789] -4.520136e+00 -4.325603e+00 -3.931071e+00 -3.736540e+00
## [2793] -3.442010e+00 -2.847481e+00 -2.152953e+00 -1.658426e+00
## [2797] -1.963900e+00 -1.869375e+00 -2.074851e+00 -1.980328e+00
## [2801] -1.985807e+00 -1.991286e+00 -2.596767e+00 -2.902248e+00
## [2805] -3.007730e+00 -3.113214e+00 -3.018699e+00 -3.124184e+00
## [2809] -4.029671e+00 -4.235158e+00 -3.940647e+00 -3.546137e+00
## [2813] -4.651627e+00 -5.057119e+00 -4.062612e+00 -4.468106e+00
## [2817] -3.373600e+00 -4.679096e+00 -2.884593e+00 -3.490091e+00
## [2821] -3.095590e+00 -3.101090e+00 -2.706590e+00 -2.812092e+00
## [2825] -3.417595e+00 -3.623099e+00 -3.828604e+00 -4.834110e+00
## [2829] -5.639617e+00 -5.645124e+00 -5.950633e+00 -6.956143e+00
## [2833] -7.461654e+00 -8.167165e+00 -9.072678e+00 -8.778192e+00
## [2837] -9.983707e+00 -9.989222e+00 -8.894739e+00 -6.400256e+00
## [2841] -4.905775e+00 -3.311294e+00 -2.216815e+00 -1.622336e+00
## [2845] -1.127859e+00 -1.633382e+00 -1.338906e+00 -1.444431e+00
## [2849] -2.149957e+00 -2.855484e+00 -3.561012e+00 -4.466541e+00
## [2853] -5.972071e+00 -7.077602e+00 -7.083134e+00 -7.988666e+00
## [2857] -8.694200e+00 -1.019973e+01 -1.110527e+01 -1.171081e+01
## [2861] -1.171634e+01 -1.212188e+01 -1.202742e+01 -7.932960e+00
## [2865] -4.338501e+00 -2.944042e+00 -1.849585e+00 -9.551285e-01
## [2869]  1.039327e+00  1.733782e+00  2.028236e+00  2.022689e+00
## [2873]  2.217141e+00  1.811593e+00  1.406043e+00  1.200493e+00
## [2877]  6.949415e-01 -2.106105e-01 -4.161634e-01 -5.217171e-01
## [2881] -7.272717e-01 -1.332827e+00 -2.238383e+00 -2.743940e+00
## [2885] -3.349498e+00 -3.755057e+00 -3.560616e+00 -2.966177e+00
## [2889] -1.571738e+00 -3.772996e-01  1.917138e+00  2.411574e+00
## [2893]  2.806010e+00  3.500445e+00  3.094879e+00  3.289313e+00
## [2897]  3.483745e+00  1.878177e+00  1.272608e+00  9.670384e-01
```

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## [2901]  2.614679e-01 -1.044103e+00 -2.249675e+00 -3.455248e+00
## [2905] -4.060821e+00 -5.766396e+00 -6.571970e+00 -7.777546e+00
## [2909] -8.183123e+00 -8.688700e+00 -8.194277e+00 -4.699856e+00
## [2913] -8.054353e-01  1.788985e+00  4.083404e+00  3.877823e+00
## [2917]  4.772241e+00  5.066658e+00  5.261074e+00  4.855490e+00
## [2921]  4.149905e+00  3.644320e+00  2.438734e+00 -1.566853e+00
## [2925] -2.472441e+00 -2.778029e+00 -2.883618e+00 -3.289207e+00
## [2929] -3.394798e+00 -3.500388e+00 -3.405980e+00 -3.111572e+00
## [2933] -2.417165e+00 -2.122758e+00 -1.728352e+00 -1.133947e+00
## [2937] -1.395423e-01  2.548617e-01  1.549265e+00  1.343668e+00
## [2941]  2.838070e+00  2.332472e+00  3.726873e+00  5.021273e+00
## [2945]  5.015673e+00  4.610072e+00  3.704471e+00  1.598869e+00
## [2949]  1.393267e+00  9.876635e-01 -1.179402e-01 -1.423544e+00
## [2953] -2.229149e+00 -3.334755e+00 -2.640361e+00 -2.045967e+00
## [2957] -2.351574e+00 -2.357182e+00 -2.362790e+00 -1.568398e+00
## [2961] -1.174008e+00 -4.796174e-01  6.147723e-01  1.209162e+00
## [2965]  1.503550e+00 -2.502062e+00 -5.076740e-01 -3.132868e-01
## [2969] -1.818900e+00 -2.451406e-02 -5.301284e-01 -3.357433e-01
## [2973] -4.135865e-02 -1.046974e+00 -1.552591e+00 -2.358208e+00
## [2977] -2.663825e+00 -3.069443e+00 -2.775061e+00 -2.880680e+00
## [2981] -2.786299e+00 -2.891918e+00 -3.197538e+00 -2.403159e+00
## [2985] -1.208780e+00  3.855986e-01  1.379977e+00  1.374354e+00
## [2989]  1.168732e+00  2.163109e+00  2.657485e+00  3.351861e+00
## [2993]  4.146237e+00  2.340612e+00  1.534986e+00  3.293608e-01
## [2997] -1.276265e+00 -1.981892e+00 -1.987519e+00 -2.193146e+00
## [3001] -2.098773e+00 -2.104401e+00 -1.910030e+00 -2.215659e+00
## [3005] -3.121288e+00 -3.726917e+00 -2.232547e+00 -1.038177e+00
## [3009] -6.438080e-01  8.505610e-01  2.044930e+00  3.239298e+00
## [3013]  5.533666e+00  4.528034e+00  5.722401e+00  6.116768e+00
## [3017]  5.911135e+00  6.505501e+00  5.299867e+00  3.494233e+00
## [3021]  2.088598e+00  1.782963e+00  2.077328e+00  1.771692e+00
## [3025]  1.466057e+00  1.060420e+00  9.547839e-01  8.491472e-01
## [3029]  1.043510e+00  7.378729e-01  6.322354e-01  1.526598e+00
## [3033]  1.420959e+00  2.915321e+00  3.609682e+00  4.804044e+00
## [3037]  4.898404e+00  5.092765e+00  4.087125e+00  4.181485e+00
## [3041]  3.775845e+00  4.370205e+00  3.864564e+00  3.258924e+00
## [3045]  1.853283e+00  1.047641e+00  4.199976e-02 -1.163642e+00
## [3049] -1.569284e+00 -4.749260e-01 -4.805683e-01 -1.386211e+00
## [3053] -1.491854e+00 -1.497496e+00 -9.031396e-01  5.912172e-01
## [3057]  1.785574e+00  2.979930e+00  4.774286e+00  6.168642e+00
## [3061]  7.462998e+00  8.757354e+00  9.551709e+00  1.044606e+01
## [3065]  1.124042e+01  1.143477e+01  9.629130e+00  7.623485e+00
## [3069]  6.717839e+00  5.912194e+00  4.006548e+00  2.500903e+00
## [3073]  1.895257e+00  9.896107e-01 -4.160354e-01 -4.216816e-01
## [3077] -1.327328e+00 -1.632974e+00 -4.386208e-01  1.355733e+00
## [3081]  3.350086e+00  3.944439e+00  5.838792e+00  7.733145e+00
## [3085]  9.127498e+00  8.821851e+00  8.916204e+00  9.910557e+00
## [3089]  9.104910e+00  7.699262e+00  6.493615e+00  4.487967e+00
## [3093]  2.282320e+00  1.476672e+00  1.371025e+00  1.465377e+00
## [3097] -3.402706e-01 -3.459182e-01 -4.515659e-01 -1.157214e+00
## [3101] -1.562861e+00 -1.668509e+00 -1.741570e-01  2.220195e+00
## [3105]  5.314547e+00  6.608900e+00  7.903252e+00  9.897604e+00
## [3109]  1.139196e+01  1.118631e+01  1.068066e+01  8.975013e+00
## [3113]  7.169366e+00  6.463718e+00  5.758070e+00  4.852423e+00
```

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## [3117]  2.446775e+00  8.411278e-01  4.354803e-01 -6.701670e-01
## [3121] -1.275814e+00 -1.481462e+00 -1.487109e+00 -1.192756e+00
## [3125] -1.598403e+00 -1.204050e+00  1.903031e-01  9.846563e-01
## [3129]  2.479010e+00  2.573363e+00  2.967716e+00  3.062070e+00
## [3133]  2.056424e+00  1.850777e+00  2.345131e+00  1.539485e+00
## [3137]  1.633839e+00  2.528193e+00  2.022548e+00  1.516902e+00
## [3141]  5.112568e-01 -4.943885e-01 -2.300034e+00 -3.405679e+00
## [3145] -4.111323e+00 -4.116968e+00 -4.522613e+00 -7.228257e+00
## [3149] -9.233901e+00 -9.439545e+00 -6.545189e+00 -2.650833e+00
## [3153]  2.435234e-01  1.837880e+00  3.032237e+00  3.026594e+00
## [3157]  3.820951e+00  3.015308e+00  2.409666e+00  1.604024e+00
## [3161]  3.198382e+00  3.092740e+00  1.987098e+00  2.081457e+00
## [3165]  8.758158e-01 -2.298252e-01 -1.635466e+00 -2.241106e+00
## [3169] -2.346747e+00 -1.852387e+00 -2.058026e+00 -2.563666e+00
## [3173] -2.869305e+00 -2.474944e+00 -1.880583e+00 -1.786221e+00
## [3177] -2.491860e+00 -1.897498e+00 -5.031354e-01 -7.087728e-01
## [3181] -1.714410e+00 -1.020047e+00 -7.256834e-01  7.686803e-01
## [3185]  1.763044e+00  1.057409e+00 -2.148227e+00 -3.053862e+00
## [3189] -4.459497e+00 -4.865131e+00 -3.870765e+00 -3.576399e+00
## [3193] -4.082033e+00 -4.287666e+00 -4.293299e+00 -3.798931e+00
## [3197] -3.804563e+00 -4.410195e+00 -4.115827e+00 -3.821458e+00
## [3201] -3.327089e+00 -3.132719e+00 -4.638349e+00 -1.343979e+00
## [3205] -1.549608e+00 -5.552371e-01 -3.608657e-01  2.335061e-01
## [3209]  3.278783e-01  8.222509e-01  7.166238e-01 -8.900285e-02
## [3213] -1.594629e+00 -2.800255e+00 -5.405880e+00 -7.411505e+00
## [3217] -8.417130e+00 -8.222754e+00 -9.528378e+00 -9.434001e+00
## [3221] -9.139624e+00 -9.745247e+00 -7.350869e+00 -5.956491e+00
## [3225] -3.162112e+00  3.322674e-01  1.926647e+00  2.721027e+00
## [3229]  3.015408e+00  3.609789e+00  4.304170e+00  5.598552e+00
## [3233]  5.292935e+00  4.987318e+00  4.481701e+00  3.676085e+00
## [3237]  2.370470e+00  6.485447e-02 -1.740760e+00 -3.046374e+00
## [3241] -4.251988e+00 -6.257601e+00 -7.163214e+00 -6.868826e+00
## [3245] -7.174437e+00 -7.480048e+00 -4.585659e+00 -6.912689e-01
## [3249]  2.503122e+00  4.997513e+00  6.091904e+00  6.486296e+00
## [3253]  5.580689e+00  5.475082e+00  5.469476e+00  4.663870e+00
## [3257] -1.041735e+00  1.552661e+00  2.047057e+00  1.841454e+00
## [3261] -4.641493e-01 -8.697515e-01 -1.875353e+00 -2.380954e+00
## [3265] -3.486555e+00 -4.792155e+00 -5.197754e+00 -5.903353e+00
## [3269] -6.508951e+00 -6.514548e+00 -5.120145e+00 -3.125741e+00
## [3273] -1.031337e+00  7.630682e-01  2.057474e+00  4.051880e+00
## [3277]  4.246287e+00  3.540695e+00  3.735103e+00  4.729512e+00
## [3281]  4.723921e+00  4.618331e+00  4.212742e+00  2.807153e+00
## [3285]  1.001565e+00 -4.040218e-01 -2.109608e+00 -3.515194e+00
## [3289] -4.620779e+00 -5.326364e+00 -5.531948e+00 -6.237531e+00
## [3293] -6.043113e+00 -5.448695e+00 -2.154276e+00  5.401436e-01
## [3297]  3.234564e+00  4.828985e+00  7.623407e+00  7.717829e+00
## [3301]  9.012253e+00  9.806677e+00  8.601101e+00  9.195527e+00
## [3305]  9.289953e+00  8.484380e+00  7.278808e+00  5.873236e+00
## [3309]  3.367665e+00  2.062095e+00 -2.434742e-01 -8.490428e-01
## [3313] -4.546105e-01 -1.060178e+00 -1.265744e+00 -1.471309e+00
## [3317] -1.776874e+00 -2.382438e+00 -4.880008e-01  2.306437e+00
## [3321]  3.300875e+00  2.195315e+00  2.989755e+00  6.084196e+00
## [3325]  6.378637e+00  5.573080e+00  5.467523e+00  5.261968e+00
## [3329]  2.756413e+00  3.950858e+00  4.645305e+00  3.439753e+00
```

```
## [3333]  2.034201e+00 -1.671350e+00 -1.876900e+00 -3.282449e+00
## [3337] -3.987997e+00 -3.193544e+00 -2.599091e+00 -3.404636e+00
## [3341] -3.810181e+00 -4.615725e+00 -3.921268e+00 -2.426810e+00
## [3345] -1.732351e+00 -1.437892e+00 -1.743431e+00 -1.148970e+00
## [3349]  4.454926e-01  1.439956e+00  1.434420e+00  1.928885e+00
## [3353]  2.523351e+00 -3.182182e+00 -2.487714e+00 -2.193245e+00
## [3357] -2.698776e+00 -4.404305e+00 -4.309833e+00 -3.815361e+00
## [3361] -4.620887e+00 -4.526413e+00 -4.231938e+00 -4.337461e+00
## [3365] -4.442984e+00 -4.348506e+00 -3.954027e+00 -3.159546e+00
## [3369] -2.165065e+00 -1.270583e+00 -5.760999e-01  5.183842e-01
## [3373]  1.612869e+00  2.007355e+00  1.201843e+00 -1.503669e+00
## [3377]  8.908197e-01  7.853099e-01  7.798010e-01 -1.325707e+00
## [3381] -1.931214e+00 -2.536719e+00 -3.942224e+00 -4.547728e+00
## [3385] -5.253231e+00 -6.058732e+00 -6.664233e+00 -7.069733e+00
## [3389] -7.075231e+00 -6.580729e+00 -5.686225e+00 -4.891720e+00
## [3393] -2.697215e+00 -4.027079e-01  9.917999e-01  2.586309e+00
## [3397]  2.580819e+00  2.775330e+00  4.369842e+00  4.364355e+00
## [3401]  3.758870e+00  4.153385e+00  4.147902e+00  2.042419e+00
## [3405]  4.369382e-01 -1.068542e+00 -3.874021e+00 -4.179499e+00
## [3409] -3.584976e+00 -3.490451e+00 -3.395926e+00 -2.201399e+00
## [3413] -2.106871e+00 -1.812342e+00 -9.178122e-01 -4.232810e-01
## [3417]  3.712514e-01  9.657850e-01  2.060320e+00  4.354856e+00
## [3421]  5.049393e+00  6.043931e+00  5.638470e+00  5.833011e+00
## [3425]  5.827552e+00  5.422095e+00  5.416639e+00  4.511185e+00
## [3429]  2.805731e+00  1.300279e+00 -4.051720e-01 -1.010622e+00
## [3433] -1.316071e+00 -1.321518e+00 -2.226964e+00 -2.332409e+00
## [3437] -2.037853e+00 -2.043295e+00 -3.487368e-01  1.745823e+00
## [3441]  2.940384e+00  3.834947e+00  5.529510e+00  5.224075e+00
## [3445]  6.018642e+00  6.213209e+00  6.207778e+00  6.502348e+00
## [3449]  6.396919e+00  5.391492e+00  4.386065e+00  2.380640e+00
## [3453]  6.752169e-01 -1.030205e+00 -1.835626e+00 -1.841046e+00
## [3457] -2.046465e+00 -2.351882e+00 -2.257298e+00 -2.062712e+00
## [3461] -2.068125e+00 -1.373537e+00 -1.789476e-01  1.615643e+00
## [3465]  3.110235e+00  4.304829e+00  5.299424e+00  5.594020e+00
## [3469]  6.088617e+00  6.383216e+00  6.277816e+00  5.372418e+00
## [3473]  5.067021e+00  3.661625e+00  2.656231e+00  1.450838e+00
## [3477] -7.545539e-01 -2.459944e+00 -2.965333e+00 -3.170720e+00
## [3481] -3.176106e+00 -3.481491e+00 -3.586874e+00 -3.992256e+00
## [3485] -3.297637e+00 -3.103016e+00 -2.308393e+00 -1.313770e+00
## [3489] -4.191444e-01 -1.424518e+00 -1.929890e+00 -1.635260e+00
## [3493] -1.740629e+00 -1.845997e+00 -2.951363e+00 -2.656728e+00
## [3497] -2.862091e+00 -1.067453e+00 -9.728134e-01 -1.578172e+00
## [3501] -3.183530e+00 -4.588886e+00 -4.894240e+00 -4.399593e+00
## [3505] -4.204945e+00 -4.710295e+00 -4.715643e+00 -4.820991e+00
## [3509] -5.026336e+00 -5.231680e+00 -5.137023e+00 -4.742364e+00
## [3513] -3.847704e+00 -3.553042e+00 -2.858378e+00 -2.063713e+00
## [3517] -1.569047e+00 -1.743787e-01 -1.979709e+00 -1.485038e+00
## [3521] -2.090365e+00 -1.595691e+00 -2.901015e+00 -3.106338e+00
## [3525] -3.011659e+00 -3.216979e+00 -3.622297e+00 -3.727614e+00
## [3529] -3.632928e+00 -3.838242e+00 -4.043554e+00 -4.248864e+00
## [3533] -4.454172e+00 -4.459479e+00 -4.464785e+00 -3.770089e+00
## [3537] -2.875391e+00 -2.180691e+00 -9.859905e-01  1.087121e-01
## [3541]  1.003416e+00  3.981221e-01  7.928295e-01  6.875386e-01
## [3545]  8.224929e-02  4.769616e-01  5.716756e-01 -3.360882e-02
```

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## [3549] -6.388916e-01 -1.944173e+00 -2.449452e+00 -3.254730e+00
## [3553] -3.560006e+00 -3.865281e+00 -4.070553e+00 -4.375825e+00
## [3557] -4.581094e+00 -4.086362e+00 -3.191628e+00 -1.696892e+00
## [3561] -2.021551e-01  9.925838e-01  1.487324e+00  2.282067e+00
## [3565]  2.776811e+00  1.771557e+00  1.766304e+00  3.161053e+00
## [3569]  2.355804e+00  2.050557e+00  6.453111e-01 -4.599329e-01
## [3573] -1.865175e+00 -3.270416e+00 -4.275654e+00 -4.880891e+00
## [3577] -4.986126e+00 -5.091360e+00 -4.996592e+00 -5.001822e+00
## [3581] -4.607050e+00 -4.412276e+00 -3.017501e+00 -2.422724e+00
## [3585] -2.727945e+00 -2.233164e+00 -1.838382e+00 -8.435977e-01
## [3589] -1.348812e+00 -1.154024e+00  6.407657e-01  2.335557e+00
## [3593]  2.630350e+00  4.251454e-01  4.199423e-01 -1.852591e-01
## [3597] -9.904586e-01 -2.095656e+00 -2.400852e+00 -3.006046e+00
## [3601] -3.111238e+00 -3.816429e+00 -3.721617e+00 -3.926804e+00
## [3605] -4.131989e+00 -4.337172e+00 -4.142353e+00 -3.847532e+00
## [3609] -3.152709e+00 -1.457885e+00 -6.630585e-01 -7.682302e-01
## [3613] -3.734001e-01  6.214319e-01 -4.837342e-01  1.911102e+00
## [3617]  1.105939e+00  9.007789e-01  7.956204e-01  5.904638e-01
## [3621] -1.469093e-02 -4.198437e-01 -1.524995e+00 -1.230144e+00
## [3625] -1.435291e+00 -2.140436e+00 -2.245579e+00 -2.350720e+00
## [3629] -2.855859e+00 -2.960997e+00 -2.966132e+00 -1.371265e+00
## [3633] -4.763969e-01  8.184736e-01  1.413346e+00  2.008220e+00
## [3637]  3.203097e+00  3.297975e+00  3.492856e+00  3.587738e+00
## [3641]  4.182622e+00  3.377508e+00  2.972397e+00  7.672869e-01
## [3645] -1.037821e+00 -1.442927e+00 -1.548030e+00 -2.053132e+00
## [3649] -2.658232e+00 -2.563329e+00 -2.268425e+00 -1.673519e+00
## [3653] -1.578610e+00 -1.083700e+00 -7.887873e-01 -1.938728e-01
## [3657] -6.989563e-01  9.596230e-02  1.890883e+00  1.685806e+00
## [3661]  1.980730e+00  1.575657e+00  1.370586e+00  1.365517e+00
## [3665]  9.604501e-01  4.553852e-01 -4.967759e-02 -1.254738e+00
## [3669] -1.759797e+00 -2.564854e+00 -3.169908e+00 -3.174960e+00
## [3673] -3.180011e+00 -3.785059e+00 -3.690105e+00 -3.495149e+00
## [3677] -3.700190e+00 -4.105230e+00 -4.210268e+00 -4.015303e+00
## [3681] -3.320336e+00 -3.125368e+00 -2.430397e+00 -2.235423e+00
## [3685] -1.640448e+00 -1.045471e+00 -9.504911e-01 -1.155509e+00
## [3689] -2.460525e+00 -2.465539e+00 -2.570551e+00 -3.275561e+00
## [3693] -3.980568e+00 -4.485573e+00 -4.890576e+00 -6.195577e+00
## [3697] -7.200576e+00 -7.105572e+00 -7.410567e+00 -7.215559e+00
## [3701] -5.920549e+00 -5.525536e+00 -5.330522e+00 -4.935505e+00
## [3705] -3.740486e+00 -3.345465e+00 -2.350441e+00 -1.555415e+00
## [3709] -1.260388e+00 -8.653574e-01 -2.170325e+00 -3.575290e+00
## [3713] -3.880253e+00 -3.885214e+00 -3.390173e+00 -3.695129e+00
## [3717] -4.800083e+00 -6.605035e+00 -6.209984e+00 -7.814932e+00
## [3721] -7.819877e+00 -8.224819e+00 -7.229760e+00 -7.934698e+00
## [3725] -8.139633e+00 -8.944567e+00 -7.149498e+00 -4.854427e+00
## [3729] -2.159354e+00 -1.364278e+00  1.308003e-01  8.258807e-01
## [3733]  1.320963e+00  1.916048e+00  3.411136e+00  3.306226e+00
## [3737]  3.001318e+00  2.496412e+00  1.491509e+00  3.866079e-01
## [3741] -8.182906e-01 -3.623187e+00 -4.728081e+00 -5.832972e+00
## [3745] -5.837861e+00 -6.342748e+00 -8.147632e+00 -8.552514e+00
## [3749] -7.457394e+00 -6.562271e+00 -5.167146e+00 -2.872018e+00
## [3753] -1.376888e+00  8.182443e-01  2.813379e+00  3.508516e+00
## [3757]  5.703656e+00  6.498798e+00  7.293943e+00  7.289089e+00
## [3761]  6.884239e+00  6.279391e+00  5.674545e+00  5.169701e+00
```

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## [3765]  3.764861e+00  2.160022e+00 -1.144814e+00 -2.149647e+00
## [3769] -2.754479e+00 -3.359307e+00 -3.764133e+00 -4.068957e+00
## [3773] -4.473778e+00 -3.278597e+00 -1.483413e+00  1.177300e-02
## [3777]  1.306962e+00  1.702153e+00  2.597347e+00  5.192543e+00
## [3781]  7.387742e+00  8.082943e+00  9.578146e+00  1.027335e+01
## [3785]  1.106856e+01  1.066377e+01  9.558987e+00  9.054203e+00
## [3789]  7.049422e+00  5.244643e+00  2.939867e+00  1.635094e+00
## [3793]  3.303226e-01 -6.744458e-01 -1.379212e+00 -2.083975e+00
## [3797] -2.488736e+00 -1.793494e+00  5.017506e-01  2.296998e+00
## [3801]  4.592247e+00  6.987499e+00  8.582754e+00  8.478011e+00
## [3805]  1.067327e+01  9.168534e+00  1.096380e+01  1.195907e+01
## [3809]  1.125434e+01  1.024961e+01  8.944885e+00  7.240163e+00
## [3813]  5.135444e+00  2.530728e+00  1.126014e+00 -1.786977e-01
## [3817] -9.834064e-01 -1.188112e+00 -4.928159e-01 -7.975167e-01
## [3821] -1.302215e+00 -6.069102e-01  1.188397e+00  3.483707e+00
## [3825]  5.679019e+00  7.874335e+00  9.969652e+00  1.186497e+01
## [3829]  1.336030e+01  1.405562e+01  1.365095e+01  1.344628e+01
## [3833]  1.324162e+01  1.183695e+01  1.083229e+01  9.227634e+00
## [3837]  7.222979e+00  5.318327e+00  4.313677e+00  3.209030e+00
## [3841]  2.204386e+00  1.699744e+00  1.095105e+00  1.904690e-01
## [3845] -1.214164e+00 -7.187950e-01  1.876577e+00  3.571952e+00
## [3849]  5.267330e+00  8.462710e+00  1.155809e+01  1.325348e+01
## [3853]  1.474887e+01  1.514426e+01  1.463965e+01  1.433505e+01
## [3857]  1.443045e+01  1.322585e+01  1.032126e+01  9.516667e+00
## [3861]  5.512078e+00  3.707491e+00  2.702908e+00  1.398328e+00
## [3865]  8.937498e-01 -9.108252e-01 -2.315397e+00 -3.019967e+00
## [3869] -3.524533e+00 -4.129097e+00 -3.833658e+00 -1.938215e+00
## [3873] -9.427706e-01  5.267715e-02  1.148128e+00  2.643581e+00
## [3877]  3.439037e+00  4.734497e+00  3.829959e+00  4.425424e+00
## [3881]  4.320891e+00  4.116362e+00  3.811836e+00  3.307312e+00
## [3885]  2.302791e+00  1.098273e+00 -6.241399e-03  2.892466e-01
## [3889] -6.152625e-01 -1.819769e+00 -2.124272e+00 -3.328772e+00
## [3893] -3.633270e+00 -3.337764e+00 -2.342256e+00  1.532555e-01
## [3897]  2.048770e+00  3.544287e+00  4.039807e+00  4.735330e+00
## [3901]  3.230856e+00  5.126385e+00  4.721917e+00  5.117452e+00
## [3905]  6.612990e+00  5.308531e+00  4.904075e+00  4.899621e+00
## [3909]  3.595171e+00  9.907239e-01 -2.137204e-01 -1.718162e+00
## [3913] -1.622600e+00 -2.727035e+00 -4.131468e+00 -5.135897e+00
## [3917] -4.840323e+00 -4.144746e+00 -2.149167e+00 -6.535839e-01
## [3921]  1.942002e+00  2.937591e+00  5.733183e+00  5.628777e+00
## [3925]  5.724375e+00  4.419976e+00  5.115580e+00  5.511187e+00
## [3929]  5.606797e+00  5.802411e+00  5.398027e+00  4.493646e+00
## [3933]  3.489268e+00  1.984894e+00  1.480522e+00  1.376154e+00
## [3937]  1.717886e-01 -1.132574e+00 -1.836933e+00 -2.941289e+00
## [3941] -4.945642e+00 -5.049992e+00 -2.954339e+00 -1.358682e+00
## [3945]  1.036977e+00  3.032640e+00  4.528305e+00  6.423974e+00
## [3949]  6.819646e+00  7.415321e+00  7.910999e+00  9.106681e+00
## [3953]  9.802365e+00  9.498053e+00  9.093744e+00  8.089437e+00
## [3957]  6.485135e+00  4.580835e+00  2.876538e+00  1.172245e+00
## [3961] -1.832046e+00 -1.736333e+00 -2.440617e+00 -2.944897e+00
## [3965] -3.449175e+00 -2.453449e+00 -1.857720e+00 -1.619883e-01
## [3969]  7.337469e-01  2.429485e+00  4.225227e+00  5.520972e+00
## [3973]  5.916720e+00  6.812471e+00  7.208226e+00  7.603983e+00
## [3977]  7.999744e+00  6.895509e+00  6.291276e+00  5.287047e+00
```

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## [3981]  4.182821e+00  2.978598e+00  1.474378e+00  8.701619e-01
## [3985]  1.659488e-01 -1.138261e+00 -3.042467e+00 -2.346671e+00
## [3989] -3.050871e+00 -4.755067e+00 -2.159261e+00 -8.634510e-01
## [3993]  1.132362e+00  3.128179e+00  5.123998e+00  4.119821e+00
## [3997]  5.115648e+00  4.811477e+00  5.907310e+00  5.103147e+00
## [4001]  5.998986e+00  5.794829e+00  4.990675e+00  2.186525e+00
## [4005]  1.823779e-01 -1.217658e-01 -3.259062e-01 -1.030043e+00
## [4009] -1.734177e+00 -2.938307e+00 -3.442434e+00 -3.546558e+00
## [4013] -3.550678e+00 -3.254795e+00 -3.258909e+00 -3.163019e+00
## [4017] -2.967126e+00 -2.671229e+00 -2.975329e+00 -2.479426e+00
## [4021] -2.283519e+00 -1.887609e+00 -1.491695e+00  4.221742e-03
## [4025] -2.998579e-01 -2.103934e+00 -2.908007e+00 -3.512076e+00
## [4029] -4.616142e+00 -5.720205e+00 -6.724264e+00 -7.128320e+00
## [4033] -7.332372e+00 -8.036421e+00 -8.540466e+00 -8.944508e+00
## [4037] -8.448546e+00 -7.052581e+00 -5.056613e+00 -2.660641e+00
## [4041] -2.064665e+00 -1.568686e+00  9.272959e-01  1.923282e+00
## [4045]  4.619271e+00  5.615264e+00  3.911260e+00  3.907260e+00
## [4049]  6.032632e-01  2.992700e-01 -1.047198e-01 -8.705965e-03
## [4053] -2.126887e-01 -1.016668e+00 -2.420643e+00 -3.924616e+00
## [4057] -4.128584e+00 -5.132549e+00 -4.836511e+00 -4.640469e+00
## [4061] -4.344423e+00 -4.048374e+00 -3.152322e+00 -1.556265e+00
## [4065] -9.602057e-01  8.358576e-01  1.331924e+00  3.027995e+00
## [4069]  5.124069e+00  6.520146e+00  7.816228e+00  7.812312e+00
## [4073]  7.708401e+00  6.904493e+00  5.700588e+00  4.596687e+00
## [4077]  3.492790e+00  2.688896e+00  1.885006e+00  5.811197e-01
## [4081] -1.227632e-01 -1.626642e+00 -2.330518e+00 -3.534390e+00
## [4085] -4.338258e+00 -4.242123e+00 -4.045984e+00 -3.649842e+00
## [4089] -3.253695e+00 -3.057546e+00 -1.961392e+00 -9.652349e-01
## [4093] -3.690740e-01 -3.672910e+00 -4.376741e+00 -4.080570e+00
## [4097] -5.084394e+00 -5.188215e+00 -5.392032e+00 -4.995845e+00
## [4101] -4.599655e+00 -5.203461e+00 -5.207264e+00 -5.711062e+00
## [4105] -5.714857e+00 -5.718649e+00 -5.522436e+00 -5.726220e+00
## [4109] -5.730000e+00 -5.333776e+00 -4.837549e+00 -4.141318e+00
## [4113] -3.645083e+00 -2.248845e+00 -1.252602e+00 -5.635635e-02
## [4117]  3.398934e-01  5.361470e-01  1.332404e+00  1.528665e+00
## [4121]  1.924930e+00  1.921199e+00  1.817471e+00  9.137472e-01
## [4125] -3.899729e-01 -2.193689e+00 -3.497402e+00 -4.001110e+00
## [4129] -6.804815e+00 -8.508517e+00 -8.712214e+00 -8.715907e+00
## [4133] -7.619597e+00 -6.723283e+00 -5.526965e+00 -3.530643e+00
## [4137] -1.434318e+00  1.062011e+00  2.558345e+00  3.354682e+00
## [4141]  3.851023e+00  5.147367e+00  4.843716e+00  5.540068e+00
## [4145]  4.736425e+00  4.632785e+00  4.729149e+00  4.025517e+00
## [4149]  3.621888e+00  2.818264e+00  2.114643e+00  1.011027e+00
## [4153]  5.074138e-01 -9.619507e-02 -5.998001e-01 -2.203401e+00
## [4157] -3.006998e+00 -2.610592e+00 -1.014181e+00  1.182233e+00
## [4161]  2.778652e+00  4.975074e+00  5.671500e+00  7.467931e+00
## [4165]  7.464365e+00  7.460803e+00  9.257245e+00  8.453691e+00
## [4169]  8.950140e+00  9.246594e+00  8.743052e+00  8.139514e+00
## [4173]  7.035979e+00  3.132449e+00  1.928923e+00  7.254001e-01
## [4177] -7.781184e-01 -1.481633e+00 -2.285143e+00 -1.788650e+00
## [4181] -1.792153e+00 -3.956511e-01  1.400854e+00  3.997364e+00
## [4185]  6.193877e+00  8.390395e+00  1.028692e+01  1.258344e+01
## [4189]  1.317997e+01  1.407650e+01  1.487304e+01  1.406958e+01
## [4193]  1.306613e+01  1.306268e+01  1.225923e+01  1.075579e+01
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## [4197]  8.952352e+00  7.348917e+00  5.245487e+00  3.342061e+00
## [4201]  2.038639e+00  1.735221e+00  3.318071e-01  2.839718e-02
## [4205]  4.249914e-01  4.215896e-01  1.118192e+00  1.914798e+00
## [4209]  3.511409e+00  5.808024e+00  8.304642e+00  9.201265e+00
## [4213]  9.597892e+00  1.159452e+01  1.249116e+01  1.248780e+01
## [4217]  1.258444e+01  1.228109e+01  1.087774e+01  1.157440e+01
## [4221]  7.871055e+00  6.867719e+00  4.364387e+00  3.161060e+00
## [4225]  2.057736e+00  1.254417e+00  5.110122e-02 -6.522099e-01
## [4229] -2.555169e-01  1.411803e-01  1.137882e+00  2.634587e+00
## [4233]  5.231297e+00  7.228011e+00  9.324729e+00  1.042145e+01
## [4237]  1.121818e+01  1.311491e+01  1.251164e+01  1.220838e+01
## [4241]  1.170512e+01  1.120187e+01  1.039862e+01  8.795380e+00
## [4245]  7.392140e+00  5.888904e+00  3.985672e+00  1.482445e+00
## [4249]  1.579222e+00  1.076003e+00 -2.721142e-02 -5.304218e-01
## [4253]  6.637210e-02  1.163170e+00  2.459973e+00  4.856779e+00
## [4257]  7.653590e+00  9.650405e+00  1.214722e+01  1.354405e+01
## [4261]  1.534088e+01  1.533771e+01  1.583455e+01  1.703139e+01
## [4265]  1.642823e+01  1.622508e+01  1.562193e+01  1.421879e+01
## [4269]  1.181565e+01  8.512521e+00  7.709392e+00  5.206267e+00
## [4273]  4.103147e+00  2.500030e+00  2.596919e+00  1.693811e+00
## [4277]  6.907080e-01  7.876091e-01  1.584515e+00  3.381424e+00
## [4281]  5.078339e+00  6.575257e+00  8.872180e+00  1.066911e+01
## [4285]  1.326604e+01  1.356297e+01  1.465992e+01  1.425686e+01
## [4289]  1.485381e+01  1.375076e+01  1.244772e+01  1.094468e+01
## [4293]  8.641649e+00  6.538620e+00  4.735595e+00  3.432575e+00
## [4297]  2.329559e+00  1.926548e+00  1.223541e+00  1.205383e-01
## [4301] -5.824599e-01  2.145463e-01  1.611557e+00  3.008572e+00
## [4305]  5.205591e+00  7.502615e+00  8.999643e+00  1.099668e+01
## [4309]  1.159371e+01  1.199075e+01  1.178780e+01  1.198485e+01
## [4313]  1.208191e+01  1.107896e+01  9.776028e+00  7.673096e+00
## [4317]  5.670169e+00  3.967246e+00 -1.356732e-01 -1.238587e+00
## [4321] -1.841497e+00 -1.944403e+00 -2.247304e+00 -1.750201e+00
## [4325] -2.253093e+00 -9.559805e-01  7.411361e-01  2.838257e+00
## [4329]  4.735383e+00  6.532513e+00  7.229647e+00  8.626786e+00
## [4333]  9.923929e+00  1.032108e+01  1.081823e+01  1.011539e+01
## [4337]  9.012546e+00  8.309712e+00  7.106882e+00  5.404056e+00
## [4341]  3.101235e+00  7.984180e-01 -7.043944e-01 -1.607202e+00
## [4345] -1.810006e+00 -2.612805e+00 -2.615599e+00 -2.818390e+00
## [4349] -3.121175e+00 -1.623956e+00 -3.267333e-01  1.670494e+00
## [4353]  3.867726e+00  5.864963e+00  7.162204e+00  8.459449e+00
## [4357]  9.456699e+00  9.353954e+00  9.051212e+00  8.148476e+00
## [4361]  8.145743e+00  7.043015e+00  5.840292e+00  3.637573e+00
## [4365]  1.434858e+00  3.214842e-02 -1.370557e+00 -2.073258e+00
## [4369] -2.175955e+00 -2.078647e+00 -2.281335e+00 -1.984019e+00
## [4373] -1.886697e+00 -1.289372e+00  4.079582e-01  2.505293e+00
## [4377]  4.002632e+00  5.799975e+00  6.597323e+00  7.994675e+00
## [4381]  8.792032e+00  8.789393e+00  9.586759e+00  9.884129e+00
## [4385]  9.081504e+00  7.778883e+00  6.276266e+00  4.773654e+00
## [4389]  2.071047e+00 -8.315565e-01 -2.834155e+00 -3.636749e+00
## [4393] -4.139339e+00 -4.241924e+00 -4.244505e+00 -4.547081e+00
## [4397] -4.349653e+00 -3.252220e+00 -1.054783e+00  1.642658e+00
## [4401]  4.940104e+00  7.437555e+00  9.735010e+00  1.103247e+01
## [4405]  1.172993e+01  1.282740e+01  1.282487e+01  1.262235e+01
## [4409]  1.231983e+01  1.101732e+01  1.031481e+01  8.612306e+00
```

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## [4413]  6.409806e+00  1.907310e+00  4.818991e-03 -1.097668e+00
## [4417] -2.300150e+00 -2.502628e+00 -2.405101e+00 -2.507570e+00
## [4421] -2.610035e+00 -1.712495e+00 -2.149501e-01  2.882599e+00
## [4425]  6.080152e+00  9.777710e+00  1.237527e+01  1.337284e+01
## [4429]  1.437041e+01  1.476799e+01  1.506557e+01  1.476315e+01
## [4433]  1.426074e+01  1.365834e+01  1.215593e+01  9.753537e+00
## [4437]  7.751144e+00  5.848756e+00  4.046373e+00  2.743994e+00
## [4441]  1.741619e+00  1.739249e+00  6.368829e-01 -3.654783e-01
## [4445] -1.067835e+00 -5.701872e-01 -7.253491e-02  3.425122e+00
## [4449]  5.222783e+00  6.920449e+00  8.218119e+00  9.215794e+00
## [4453]  1.071347e+01  1.141116e+01  1.110885e+01  1.110654e+01
## [4457]  1.170424e+01  1.090194e+01  1.029964e+01  7.497354e+00
## [4461]  5.295069e+00  1.992789e+00  1.905134e-01 -3.117578e-01
## [4465] -8.140245e-01 -1.616287e+00 -1.118544e+00 -2.120798e+00
## [4469] -2.223046e+00 -2.025291e+00 -5.275302e-01  2.270235e+00
## [4473]  5.968004e+00  7.865778e+00  9.563556e+00  1.076134e+01
## [4477]  1.135913e+01  1.165692e+01  1.155471e+01  1.175252e+01
## [4481]  1.085032e+01  9.148131e+00  7.845946e+00  5.543765e+00
## [4485]  2.841588e+00  5.394161e-01 -1.462751e+00 -1.264914e+00
## [4489] -1.567073e+00 -1.769227e+00 -2.071376e+00 -2.273521e+00
## [4493] -2.475661e+00 -2.177797e+00 -6.799284e-01  1.517945e+00
## [4497]  4.315823e+00  6.413705e+00  8.211592e+00  9.709483e+00
## [4501]  1.040738e+01  1.080528e+01  1.100318e+01  1.020109e+01
## [4505]  9.899007e+00  8.796926e+00  7.494849e+00  5.992776e+00
## [4509]  3.090708e+00  7.886448e-01 -8.134141e-01 -2.015468e+00
## [4513] -2.817518e+00 -3.419564e+00 -3.821604e+00 -3.723641e+00
## [4517] -3.725672e+00 -3.227700e+00 -9.297222e-01  1.868260e+00
## [4521]  4.466246e+00  7.064237e+00  8.262233e+00  8.660233e+00
## [4525]  1.015824e+01  1.025625e+01  1.015426e+01  1.045228e+01
## [4529]  8.950301e+00  8.148328e+00  7.046360e+00  5.044396e+00
## [4533]  2.142437e+00 -9.595173e-01 -1.461467e+00 -2.563413e+00
## [4537] -2.865354e+00 -3.367290e+00 -3.769222e+00 -4.171149e+00
## [4541] -4.673072e+00 -3.974990e+00 -2.376904e+00  6.211870e-01
## [4545]  3.019282e+00  5.117382e+00  6.115487e+00  7.613596e+00
## [4549]  8.511710e+00  8.709828e+00  8.907951e+00  9.206078e+00
## [4553]  9.104210e+00  8.502346e+00  7.200487e+00  6.198633e+00
## [4557]  4.596783e+00  2.394937e+00  2.930964e-01 -6.087399e-01
## [4561] -1.710572e+00 -2.812399e+00 -2.914221e+00 -3.016039e+00
## [4565] -3.117853e+00 -2.019662e+00 -1.021466e+00  9.767340e-01
## [4569]  2.374939e+00  3.873148e+00  4.571362e+00  6.369580e+00
## [4573]  7.367803e+00  8.266031e+00  9.464263e+00  9.262500e+00
## [4577]  7.860741e+00  7.358987e+00  7.357237e+00  5.155492e+00
## [4581]  3.553752e+00  8.520160e-01  5.502846e-01  3.485579e-01
## [4585]  2.468357e-01 -6.548819e-01 -1.556595e+00 -3.058303e+00
## [4589] -4.860007e+00 -4.861707e+00 -4.363401e+00 -3.065092e+00
## [4593] -2.366777e+00 -8.684583e-01  2.298652e-01  1.928193e+00
## [4597]  3.226526e+00  4.224863e+00  4.723205e+00  5.321552e+00
## [4601]  5.119903e+00  5.818258e+00  4.316618e+00  2.914983e+00
## [4605]  1.213352e+00 -1.882737e-01 -1.189895e+00 -2.291512e+00
## [4609] -3.093124e+00 -3.394732e+00 -4.096335e+00 -4.497934e+00
## [4613] -4.699528e+00 -4.401117e+00 -3.602702e+00 -1.004283e+00
## [4617]  1.994142e+00  4.292571e+00  6.291004e+00  7.689442e+00
## [4621]  8.587885e+00  9.486332e+00  9.484784e+00  9.283241e+00
## [4625]  8.781702e+00  7.580167e+00  6.178638e+00  4.277112e+00
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## [4629]  2.175592e+00  3.740758e-01 -1.627436e+00 -2.428942e+00
## [4633] -3.230445e+00 -3.431942e+00 -3.433435e+00 -3.234924e+00
## [4637] -3.336407e+00 -2.337887e+00 -1.039361e+00  8.591688e-01
## [4641]  3.257703e+00  4.356243e+00  5.954786e+00  7.853335e+00
## [4645]  9.251888e+00  9.850445e+00  1.054901e+01  1.064757e+01
## [4649]  9.946146e+00  8.844722e+00  6.243302e+00  5.141888e+00
## [4653]  3.840477e+00  2.439072e+00  1.637671e+00  1.236275e+00
## [4657]  7.348828e-01 -3.665044e-01 -7.678870e-01 -4.692650e-01
## [4661] -1.470638e+00 -1.572007e+00 -3.733714e-01  1.225269e+00
## [4665]  2.423914e+00  4.422563e+00  5.721218e+00  6.419876e+00
## [4669]  5.918540e+00  6.117208e+00  6.115880e+00  5.514557e+00
## [4673]  6.113239e+00  4.711925e+00  4.310616e+00  2.409311e+00
## [4677]  4.080114e-01  7.067160e-01  7.054252e-01 -2.958611e-01
## [4681] -7.971428e-01 -4.984199e-01 -6.996924e-01 -1.100960e+00
## [4685] -2.202224e+00 -3.003483e+00 -1.504737e+00 -6.059864e-01
## [4689]  7.927685e-01  1.991528e+00  2.990292e+00  2.489061e+00
## [4693]  2.487834e+00  3.786612e+00  4.785394e+00  4.584181e+00
## [4697]  4.882972e+00  5.181768e+00  4.980569e+00  4.179374e+00
## [4701]  2.678184e+00  6.769979e-01 -8.241833e-01 -1.125360e+00
## [4705] -2.826532e+00 -3.927699e+00 -5.128862e+00 -5.530021e+00
## [4709] -5.631175e+00 -5.532324e+00 -2.833469e+00  2.653911e-01
## [4713]  2.664256e+00  3.663124e+00  5.261998e+00  6.160876e+00
## [4717]  7.359758e+00  8.158646e+00  8.657537e+00  7.756433e+00
## [4721]  7.555334e+00  7.754239e+00  7.053149e+00  6.552064e+00
## [4725]  5.250983e+00  3.949906e+00  2.848834e+00  2.647767e+00
## [4729]  1.146704e+00  1.345645e+00 -4.554086e-01 -6.564579e-01
## [4733] -8.575027e-01 -8.585429e-01 -8.595786e-01 -4.606098e-01
## [4737] -5.616365e-01  2.373414e-01  2.536324e+00  2.435311e+00
## [4741]  2.434302e+00  1.633298e+00  5.322987e-01  8.313038e-01
## [4745]  9.303133e-01  2.029327e+00  1.728346e+00  1.427369e+00
## [4749]  6.263968e-01 -6.745710e-01 -1.375534e+00 -2.376493e+00
## [4753] -2.777447e+00 -2.978397e+00 -3.779342e+00 -4.980283e+00
## [4757] -4.781219e+00 -3.882151e+00 -3.683078e+00 -1.684001e+00
## [4761] -6.849190e-01  1.141674e-01  3.132582e-01  1.712354e+00
## [4765]  2.311453e+00  2.510558e+00  4.009667e+00  4.308780e+00
## [4769]  3.307898e+00  3.607020e+00  3.606147e+00  3.105279e+00
## [4773]  1.104415e+00 -1.964449e-01 -5.973000e-01 -9.981506e-01
## [4777] -1.798997e+00 -2.599838e+00 -3.900675e+00 -3.101508e+00
## [4781] -3.702336e+00 -3.703160e+00 -2.903979e+00 -1.504793e+00
## [4785] -6.056036e-01  8.935907e-01  3.292790e+00  5.191993e+00
## [4789]  7.091201e+00  8.290413e+00  8.089630e+00  8.688851e+00
## [4793]  7.588077e+00  7.387307e+00  7.586542e+00  5.485781e+00
## [4797]  2.785025e+00  1.584273e+00  5.835255e-01 -9.172174e-01
## [4801] -1.217956e+00 -1.918690e+00 -1.619419e+00 -1.620144e+00
## [4805] -2.020865e+00 -1.321581e+00  2.777078e-01  9.770007e-01
## [4809]  2.676298e+00  3.775600e+00  4.274906e+00  4.374217e+00
## [4813]  6.673532e+00  6.772852e+00  7.072176e+00  5.271505e+00
## [4817]  4.770838e+00  4.870176e+00  4.169518e+00  3.868864e+00
## [4821]  1.568215e+00  5.675707e-01  3.669306e-01  6.629497e-02
## [4825] -2.343362e-01 -1.934963e+00 -2.435585e+00 -2.636203e+00
## [4829] -3.036816e+00 -3.337425e+00 -2.538030e+00 -2.038630e+00
## [4833] -1.639225e+00 -6.398164e-01  5.595969e-01  9.590147e-01
## [4837]  1.058437e+00  7.578636e-01  6.572948e-01  5.673036e-02
## [4841] -1.843830e+00 -2.644385e+00 -2.344936e+00 -2.045483e+00
```

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## [4845] -3.046025e+00 -3.846563e+00 -4.247096e+00 -4.147625e+00
## [4849] -4.248150e+00 -5.148670e+00 -5.649185e+00 -6.349696e+00
## [4853] -6.650203e+00 -6.850705e+00 -4.551203e+00 -3.951697e+00
## [4857] -3.152185e+00 -2.652670e+00 -1.353150e+00 -5.362586e-02
## [4861]  6.459029e-01 -2.154564e+00  2.449736e-01  1.445156e-01
## [4865] -5.593792e-02 -6.563871e-01 -1.256832e+00 -2.157272e+00
## [4869] -3.357708e+00 -4.358139e+00 -4.858566e+00 -5.558989e+00
## [4873] -6.059407e+00 -7.259821e+00 -7.660230e+00 -8.360635e+00
## [4877] -8.461036e+00 -7.161432e+00 -6.061824e+00 -4.862211e+00
## [4881] -3.262594e+00 -1.862972e+00 -6.334647e-02  4.362839e-01
## [4885]  5.359186e-01  1.535558e+00  2.135201e+00  2.334849e+00
## [4889]  2.334502e+00  2.034158e+00  2.233820e+00  8.334852e-01
## [4893] -6.668448e-01 -2.367170e+00 -3.767492e+00 -5.367809e+00
## [4897] -6.268121e+00 -6.568429e+00 -6.168733e+00 -5.769032e+00
## [4901] -5.969327e+00 -6.469617e+00 -6.169903e+00 -4.470185e+00
## [4905] -2.670462e+00 -1.070735e+00  4.289965e-01  1.328732e+00
## [4909]  2.228473e+00  2.128217e+00  1.827966e+00  9.277198e-01
## [4913]  1.827478e+00  5.272398e-01  2.700638e-02 -6.732227e-01
## [4917] -7.734473e-01 -1.173668e+00 -1.673883e+00 -3.474095e+00
## [4921] -4.574302e+00 -4.774505e+00 -4.774703e+00 -5.474897e+00
## [4925] -6.475087e+00 -6.275272e+00 -5.675453e+00 -3.875630e+00
## [4929] -1.675802e+00 -4.759695e-01  1.123867e+00  1.323708e+00
## [4933]  2.723553e+00  1.523403e+00  1.823257e+00  1.023116e+00
## [4937]  1.522978e+00  6.228455e-01  3.227170e-01 -6.774071e-01
## [4941] -1.677527e+00 -2.377642e+00 -2.677753e+00 -3.577860e+00
## [4945] -3.877962e+00 -4.278060e+00 -4.678154e+00 -5.578243e+00
## [4949] -5.778328e+00 -5.678409e+00 -4.878485e+00 -2.778557e+00
## [4953] -1.678624e+00 -4.786873e-01  4.212539e-01  1.121199e+00
## [4957]  1.721149e+00  2.221104e+00  2.621062e+00  2.921025e+00
## [4961]  3.120992e+00  3.620964e+00  2.320940e+00  1.020920e+00
## [4965]  5.209049e-01  1.208939e-01 -6.791128e-01 -1.279115e+00
## [4969] -1.179113e+00 -1.779107e+00 -2.179096e+00 -2.379081e+00
## [4973] -2.879062e+00 -2.879038e+00 -2.279010e+00 -1.378978e+00
## [4977] -6.789411e-01  4.210999e-01  1.021145e+00  8.211949e-01
## [4981]  2.521249e+00  1.721307e+00  1.921370e+00  2.221437e+00
## [4985]  1.721508e+00  1.721584e+00  9.216636e-01 -6.782521e-01
## [4989] -2.078164e+00 -3.278071e+00 -4.077973e+00 -4.577872e+00
## [4993] -5.277766e+00 -5.977656e+00 -6.177541e+00 -6.377423e+00
## [4997] -6.777300e+00 -8.177172e+00 -5.677040e+00 -2.876904e+00
## [5001] -1.376764e+00 -1.766193e-01  1.523530e+00  2.823683e+00
## [5005]  4.123841e+00  5.124002e+00  5.324169e+00  5.824339e+00
## [5009]  6.824514e+00  6.524693e+00  6.524877e+00  5.625064e+00
## [5013]  3.625256e+00  1.625453e+00 -1.743468e-01 -2.374142e+00
## [5017] -4.073933e+00 -4.873719e+00 -5.573501e+00 -6.173279e+00
## [5021] -6.673053e+00 -6.872822e+00 -4.772587e+00 -1.572348e+00
## [5025] -1.272104e+00 -9.718565e-01 -1.371604e+00 -3.713479e-01
## [5029]  3.289128e-01  4.291778e-01  4.294471e-01 -7.027929e-02
## [5033] -1.700014e-01 -9.697193e-01 -1.669433e+00 -2.569142e+00
## [5037] -3.668847e+00 -4.868548e+00 -5.068244e+00 -5.567937e+00
## [5041] -7.567624e+00 -7.767308e+00 -8.666987e+00 -8.266662e+00
## [5045] -8.766333e+00 -8.966000e+00 -8.465662e+00 -5.465320e+00
## [5049] -2.364974e+00 -1.646232e-01  1.635732e+00  3.536091e+00
## [5053]  5.036454e+00  6.836822e+00  7.137194e+00  7.337570e+00
## [5057]  8.437950e+00  8.438335e+00  8.138724e+00  6.439117e+00
```

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## [5061]  3.139515e+00  1.239916e+00 -1.759678e+00 -3.459267e+00
## [5065] -4.058853e+00 -4.358434e+00 -3.958011e+00 -4.057584e+00
## [5069] -5.057152e+00 -5.456717e+00 -4.956277e+00 -4.055832e+00
## [5073] -3.155384e+00 -1.954931e+00 -5.544739e-01  2.459874e-01
## [5077] -4.535471e-01 -9.530773e-01  1.247397e+00  5.478750e-01
## [5081]  1.048357e+00  6.488442e-01  3.493352e-01 -2.150170e+00
## [5085] -3.249670e+00 -4.249166e+00 -5.348658e+00 -5.248146e+00
## [5089] -5.247630e+00 -5.147109e+00 -6.046584e+00 -6.646055e+00
## [5093] -7.245522e+00 -6.944984e+00 -7.144442e+00 -5.643896e+00
## [5097] -5.043346e+00 -4.842791e+00 -3.942233e+00 -4.941670e+00
## [5101] -3.441102e+00 -4.640531e+00 -6.339955e+00 -4.039375e+00
## [5105] -3.838791e+00 -3.638203e+00 -4.037610e+00 -4.637014e+00
## [5109] -5.836413e+00 -6.835807e+00 -8.035198e+00 -9.034584e+00
## [5113] -9.133966e+00 -9.433344e+00 -1.003272e+01 -1.073209e+01
## [5117] -1.183145e+01 -1.353081e+01 -1.123017e+01 -7.029523e+00
## [5121] -4.628872e+00 -2.628216e+00 -1.527556e+00 -8.268917e-01
## [5125] -2.262232e-01 -5.255506e-01  7.512621e-02  2.758072e-01
## [5129] -2.350752e-02  4.771819e-01 -2.212444e-02 -1.021427e+00
## [5133] -1.520725e+00 -2.320018e+00 -2.919308e+00 -2.818593e+00
## [5137] -3.017874e+00 -3.417151e+00 -3.316424e+00 -3.015693e+00
## [5141] -3.014957e+00 -3.514217e+00 -3.813473e+00 -2.412725e+00
## [5145] -2.411973e+00 -1.811216e+00 -9.104553e-01  9.030961e-02
## [5149]  1.191079e+00  2.091852e+00  2.692630e+00  1.893411e+00
## [5153]  1.794197e+00  6.949872e-01  2.957815e-01  9.657989e-02
## [5157] -4.026175e-01 -9.018107e-01 -1.101000e+00 -1.500185e+00
## [5161] -2.299365e+00 -3.298542e+00 -3.897714e+00 -3.896882e+00
## [5165] -3.896046e+00 -3.895206e+00 -3.794362e+00 -3.293513e+00
## [5169] -2.992660e+00 -1.391804e+00 -1.590943e+00  4.099227e-01
## [5173] -2.689208e+00 -2.588334e+00 -8.874567e-01 -1.886575e+00
## [5177] -1.856888e-01 -8.847986e-01 -1.683904e+00 -2.883006e+00
## [5181] -3.582103e+00 -3.881196e+00 -4.680285e+00 -5.179370e+00
## [5185] -5.678451e+00 -5.577527e+00 -5.676600e+00 -6.375668e+00
## [5189] -6.874732e+00 -6.973792e+00 -6.272847e+00 -4.471899e+00
## [5193] -3.170947e+00 -2.069990e+00 -1.269029e+00  1.319360e-01
## [5197]  1.132905e+00  1.733878e+00  2.434856e+00  2.835837e+00
## [5201]  2.736823e+00  2.637813e+00  9.388071e-01 -5.601948e-01
## [5205] -2.059193e+00 -3.458186e+00 -4.457176e+00 -4.856161e+00
## [5209] -5.355142e+00 -5.854119e+00 -6.353092e+00 -7.052061e+00
## [5213] -7.351025e+00 -8.149986e+00 -8.348942e+00 -6.147894e+00
## [5217] -3.146842e+00 -1.645786e+00 -4.447262e-01  6.563381e-01
## [5221]  9.574065e-01  2.058479e+00  2.659556e+00  3.460637e+00
## [5225]  2.561721e+00  2.562810e+00  2.163904e+00  1.465001e+00
## [5229]  8.661023e-01 -1.327921e-01 -1.531682e+00 -2.230569e+00
## [5233] -3.529451e+00 -4.028329e+00 -5.227203e+00 -6.126073e+00
## [5237] -6.524938e+00 -7.023800e+00 -6.422657e+00 -5.821510e+00
## [5241] -4.420360e+00 -2.419205e+00 -1.180458e-01  1.383117e+00
## [5245]  3.184285e+00  4.185456e+00  3.986631e+00  3.187811e+00
## [5249]  3.088994e+00  3.990182e+00  1.791374e+00  6.925700e-01
## [5253] -1.006230e+00 -2.605026e+00 -3.203818e+00 -4.002605e+00
## [5257] -5.001389e+00 -4.700168e+00 -5.198944e+00 -5.697715e+00
## [5261] -6.296482e+00 -6.495245e+00 -5.394004e+00 -3.192759e+00
## [5265] -1.691510e+00 -3.902566e-01  1.011001e+00  2.212262e+00
## [5269]  2.713528e+00  1.914797e+00  1.916071e+00  1.517349e+00
## [5273]  2.718631e+00  2.119917e+00  1.821207e+00  4.225009e-01
```

```
## [5277] -2.276201e+00 -3.374899e+00 -3.873592e+00 -4.172282e+00
## [5281] -4.270967e+00 -4.569649e+00 -4.568326e+00 -4.466999e+00
## [5285] -4.765669e+00 -5.064334e+00 -4.262995e+00 -1.761652e+00
## [5289] -2.603045e-01  1.410466e-01  7.424019e-01  1.443761e+00
## [5293]  2.845125e+00  3.246492e+00  3.147864e+00  3.449239e+00
## [5297]  2.450619e+00  1.552002e+00  5.533902e-01 -4.521801e-02
## [5301] -1.343822e+00 -2.642422e+00 -2.441018e+00 -3.439610e+00
## [5305] -4.138198e+00 -4.836782e+00 -5.135362e+00 -5.533937e+00
## [5309] -5.832509e+00 -6.031077e+00 -5.129640e+00 -2.728200e+00
## [5313] -1.226755e+00 -6.253066e-01  3.761460e-01  4.776027e-01
## [5317]  1.579063e+00  2.980528e+00  2.981997e+00  2.983470e+00
## [5321]  2.784947e+00  2.286428e+00  1.287913e+00  8.940182e-02
## [5325] -1.509105e+00 -2.707608e+00 -3.606107e+00 -3.604602e+00
## [5329] -4.003092e+00 -4.901579e+00 -5.400062e+00 -5.898541e+00
## [5333] -5.797015e+00 -6.195486e+00 -4.493952e+00 -2.092415e+00
## [5337] -1.390873e+00 -7.893278e-01  8.122217e-01  1.713775e+00
## [5341]  2.515333e+00  3.016895e+00  3.018460e+00  3.620030e+00
## [5345]  3.121604e+00  2.323181e+00  1.724763e+00 -1.736512e-01
## [5349] -1.672061e+00 -2.970468e+00 -3.968870e+00 -4.067268e+00
## [5353] -3.665662e+00 -3.364052e+00 -3.362438e+00 -3.460820e+00
## [5357] -3.659198e+00 -3.557573e+00 -2.955943e+00 -2.454309e+00
## [5361] -1.852671e+00  4.897134e-02  1.950617e+00  3.852267e+00
## [5365]  5.353921e+00  6.055579e+00  4.957241e+00  5.558907e+00
## [5369]  5.460577e+00  4.362251e+00  3.863929e+00  1.965611e+00
## [5373]  7.672975e-01 -1.431013e+00 -1.629318e+00 -2.827620e+00
## [5377] -3.825918e+00 -4.224212e+00 -4.522502e+00 -4.720788e+00
## [5381] -5.419070e+00 -5.517348e+00 -5.715622e+00 -3.413892e+00
## [5385] -1.215852e-02  2.389579e+00  4.491321e+00  6.293067e+00
## [5389]  6.994817e+00  7.396571e+00  9.098329e+00  8.900091e+00
## [5393]  7.301857e+00  6.703627e+00  6.005400e+00  3.707178e+00
## [5397]  1.808960e+00  4.107457e-01 -9.874646e-01 -1.285671e+00
## [5401] -2.283873e+00 -2.582071e+00 -2.680266e+00 -3.378456e+00
## [5405] -4.576643e+00 -4.774825e+00 -4.173004e+00 -2.471178e+00
## [5409] -1.693486e-01  2.132485e+00  4.334322e+00  5.836164e+00
## [5413]  7.238009e+00  8.339858e+00  8.441712e+00  8.443569e+00
## [5417]  7.945430e+00  6.947295e+00  6.149164e+00  3.751037e+00
## [5421]  1.652914e+00  6.547955e-01 -5.433195e-01 -1.141431e+00
## [5425] -1.339538e+00 -1.437641e+00 -2.235740e+00 -3.033835e+00
## [5429] -3.531927e+00 -3.430014e+00 -2.528097e+00 -9.261768e-01
## [5433]  1.757477e-01  9.776761e-01  1.779609e+00  2.381545e+00
## [5437]  2.983485e+00  3.485429e+00  5.187378e+00  6.789330e+00
## [5441]  6.291286e+00  5.593246e+00  4.395210e+00  2.697178e+00
## [5445]  1.991496e-01 -1.898875e+00 -2.496895e+00 -3.294911e+00
## [5449] -2.792924e+00 -3.290932e+00 -3.488937e+00 -3.786937e+00
## [5453] -3.284934e+00 -3.882927e+00 -2.780916e+00 -5.789004e-01
## [5457]  9.231187e-01  2.425142e+00  4.327169e+00  5.229199e+00
## [5461]  6.231234e+00  6.333273e+00  6.635316e+00  6.537362e+00
## [5465]  6.139413e+00  5.241467e+00  4.143525e+00  2.045587e+00
## [5469] -3.523464e-01 -1.950276e+00 -3.048202e+00 -3.146124e+00
## [5473] -3.244043e+00 -3.741957e+00 -3.739867e+00 -4.137774e+00
## [5477] -4.835676e+00 -5.733575e+00 -5.131469e+00 -3.729360e+00
## [5481] -1.527247e+00  4.748699e-01  3.376991e+00  5.379116e+00
## [5485]  5.981244e+00  6.783377e+00  7.285514e+00  6.787654e+00
## [5489]  6.689799e+00  5.891947e+00  4.794099e+00  2.396255e+00
```

```
## [5493] -1.584898e-03 -7.994210e-01 -2.297253e+00 -3.095082e+00
## [5497] -3.292906e+00 -3.790727e+00 -3.988543e+00 -5.086356e+00
## [5501] -5.084165e+00 -4.881970e+00 -5.379771e+00 -3.277568e+00
## [5505] -3.753612e-01  2.426849e+00  4.429064e+00  5.831282e+00
## [5509]  6.733505e+00  7.635731e+00  7.237961e+00  7.440195e+00
## [5513]  7.342432e+00  6.044674e+00  5.146920e+00  2.649169e+00
## [5517]  5.142250e-02 -1.346320e+00 -2.444059e+00 -2.741794e+00
## [5521] -3.439525e+00 -3.837253e+00 -4.134976e+00 -5.132696e+00
## [5525] -5.730411e+00 -5.428123e+00 -4.425831e+00 -2.523535e+00
## [5529] -1.321235e+00 -1.893149e-02  2.833761e-01  1.685687e+00
## [5533]  2.688003e+00  4.190322e+00  5.192645e+00  4.094972e+00
## [5537]  3.997303e+00  3.399637e+00  2.501976e+00  8.043181e-01
## [5541] -9.933357e-01 -2.390986e+00 -2.888632e+00 -3.586274e+00
## [5545] -3.983912e+00 -4.781547e+00 -4.679178e+00 -3.976804e+00
## [5549] -2.974427e+00 -4.072046e+00 -4.669662e+00 -3.067273e+00
## [5553]  3.511943e-02  1.737516e+00  3.239916e+00  5.042320e+00
## [5557]  5.044728e+00  5.447139e+00  5.249555e+00  4.751974e+00
## [5561]  4.254398e+00  2.856825e+00  2.259256e+00  3.616903e-01
## [5565] -1.335871e+00 -2.033429e+00 -2.830982e+00 -3.128532e+00
## [5569] -3.826078e+00 -4.623621e+00 -4.121159e+00 -3.818694e+00
## [5573] -5.816224e+00 -5.113751e+00 -3.011274e+00 -1.308793e+00
## [5577]  2.936911e-01  1.496180e+00  3.898672e+00  4.901168e+00
## [5581]  6.003668e+00  6.906172e+00  7.408679e+00  6.411190e+00
## [5585]  5.713706e+00  4.516225e+00  3.218748e+00  1.021274e+00
## [5589] -2.761953e-01 -1.173661e+00 -1.771123e+00 -2.368581e+00
## [5593] -2.566035e+00 -2.663486e+00 -3.960932e+00 -3.958375e+00
## [5597] -3.955814e+00 -3.453249e+00 -2.550680e+00 -1.548108e+00
## [5601] -9.455317e-01 -1.429516e-01  7.596322e-01  2.162220e+00
## [5605]  3.664811e+00  3.967407e+00  5.470006e+00  5.872609e+00
## [5609]  6.475215e+00  5.377826e+00  3.580440e+00  1.583058e+00
## [5613] -1.431967e-02 -8.116940e-01 -9.090644e-01 -9.064311e-01
## [5617] -1.203794e+00 -1.601153e+00 -1.898508e+00 -2.295860e+00
## [5621] -3.193208e+00 -3.490552e+00 -2.487892e+00 -3.852280e-01
## [5625]  1.617439e+00  3.420111e+00  4.522786e+00  5.525465e+00
## [5629]  6.228147e+00  6.230834e+00  6.333524e+00  5.636218e+00
## [5633]  5.438915e+00  4.841617e+00  3.544322e+00  2.147031e+00
## [5637] -8.502559e-01 -1.547539e+00 -2.044819e+00 -2.742095e+00
## [5641] -1.839367e+00 -2.236635e+00 -1.933899e+00 -2.131160e+00
## [5645] -2.328417e+00 -3.025670e+00 -1.922920e+00 -3.201651e-01
## [5649]  2.182593e+00  4.485355e+00  6.288121e+00  6.790890e+00
## [5653]  8.093663e+00  8.296440e+00  8.699221e+00  8.102006e+00
## [5657]  7.704794e+00  6.207586e+00  4.610382e+00  3.013181e+00
## [5661]  8.159846e-01 -8.812083e-01 -1.978397e+00 -2.575583e+00
## [5665] -2.772765e+00 -2.869942e+00 -2.867117e+00 -3.164287e+00
## [5669] -3.761454e+00 -3.758616e+00 -3.155776e+00 -1.052931e+00
## [5673]  2.149917e+00  4.352770e+00  7.255625e+00  9.058485e+00
## [5677]  1.106135e+01  1.066422e+01  1.066709e+01  1.106996e+01
## [5681]  1.077284e+01  9.775721e+00  8.678607e+00  6.181497e+00
## [5685]  3.684390e+00  1.687287e+00  2.901880e-01 -1.506907e+00
## [5689] -2.403999e+00 -3.401087e+00 -3.098171e+00 -2.695252e+00
## [5693] -2.792329e+00 -3.389402e+00 -3.486471e+00 -2.583537e+00
## [5697]  1.419401e+00  5.222343e+00  8.025289e+00  9.028238e+00
## [5701]  9.731191e+00  1.043415e+01  1.073711e+01  1.014007e+01
## [5705]  9.643040e+00  8.546012e+00  7.148987e+00  4.651967e+00
```

```
## [5709]  1.554949e+00  1.579359e-01 -8.390739e-01 -8.360799e-01
## [5713] -1.933082e+00 -2.530081e+00 -2.627076e+00 -3.524067e+00
## [5717] -4.121054e+00 -4.618038e+00 -4.815018e+00 -3.111994e+00
## [5721] -2.089671e-01  3.194064e+00  4.397099e+00  5.700137e+00
## [5725]  6.203180e+00  6.306225e+00  6.809275e+00  6.312328e+00
## [5729]  3.615385e+00  2.718446e+00  1.021511e+00  2.245787e-01
## [5733] -7.234945e-02 -7.692739e-01 -7.661947e-01 -8.631118e-01
## [5737] -8.600251e-01 -1.156935e+00 -1.953841e+00 -1.450743e+00
## [5741] -1.847642e+00 -1.744537e+00 -1.241428e+00 -1.438315e+00
## [5745] -4.351992e-01  3.679207e-01  3.710442e-01  1.374171e+00
## [5749]  2.277302e+00  1.580437e+00  2.083575e+00  2.686717e+00
## [5753]  3.089863e+00  1.793012e+00  9.616518e-02 -7.006781e-01
## [5757] -7.975178e-01 -7.943537e-01 -7.911860e-01 -7.880146e-01
## [5761] -1.184839e+00 -1.481661e+00 -2.478478e+00 -2.475292e+00
## [5765] -2.372102e+00 -2.668909e+00 -1.665712e+00 -3.625110e-01
## [5769] -1.459307e+00 -1.456098e+00 -2.552887e+00 -2.949671e+00
## [5773] -1.946452e+00 -6.432293e-01 -1.400028e-01  8.632273e-01
## [5777]  1.166461e+00  7.696986e-01 -1.270603e-01 -3.238155e-01
## [5781] -6.205671e-01 -1.517315e+00 -2.214059e+00 -2.510800e+00
## [5785] -2.707537e+00 -3.204270e+00 -3.601000e+00 -3.997726e+00
## [5789] -4.094448e+00 -4.091167e+00 -4.087882e+00 -2.384593e+00
## [5793] -7.813008e-01 -3.780049e-01  1.625295e+00  3.228598e+00
## [5797]  4.431905e+00  4.635215e+00  4.838529e+00  3.841847e+00
## [5801]  3.145169e+00  2.448494e+00  1.651823e+00  8.551549e-01
## [5805]  4.584910e-01  3.618306e-01 -2.348261e-01 -2.314792e-01
## [5809] -2.281286e-01 -2.247744e-01 -5.214166e-01 -6.180551e-01
## [5813] -5.146900e-01 -6.113213e-01 -5.079490e-01 -4.045730e-01
## [5817]  2.988067e-01  1.002190e+00  1.205577e+00  2.008967e+00
## [5821]  1.312361e+00  1.575917e-02 -2.808395e-01 -5.774345e-01
## [5825] -1.474026e+00 -1.570614e+00 -1.667198e+00 -2.363778e+00
## [5829] -2.160355e+00 -2.056928e+00 -1.353498e+00 -1.650064e+00
## [5833] -1.846627e+00 -1.943185e+00 -2.239741e+00 -2.036292e+00
## [5837] -1.932840e+00 -1.829384e+00 -1.625925e+00 -1.722462e+00
## [5841] -1.218996e+00 -8.155257e-01 -5.120520e-01  7.914253e-01
## [5845]  1.294906e+00  1.598391e+00  1.401879e+00  1.405371e+00
## [5849]  1.008866e+00  5.123649e-01 -5.841326e-01 -1.780626e+00
## [5853] -2.077117e+00 -3.873603e+00 -4.170086e+00 -4.966566e+00
## [5857] -4.963042e+00 -3.859514e+00 -3.455982e+00 -3.152447e+00
## [5861] -2.548909e+00 -2.845367e+00 -2.841821e+00 -2.538271e+00
## [5865] -1.234718e+00 -2.311616e-01 -3.276014e-01  1.759625e-01
## [5869]  1.795299e-01 -3.168990e-01 -1.113324e+00 -2.097461e-01
## [5873] -1.606164e+00 -1.402579e+00 -1.998990e+00 -2.295397e+00
## [5877] -3.191801e+00 -3.088201e+00 -4.584597e+00 -5.580990e+00
## [5881] -5.777380e+00 -6.073765e+00 -6.270147e+00 -6.466526e+00
## [5885] -6.162901e+00 -5.659272e+00 -5.755640e+00 -6.252004e+00
## [5889] -6.048364e+00 -5.344721e+00 -3.241074e+00 -3.037424e+00
## [5893] -2.833770e+00 -3.130113e+00 -2.626452e+00 -1.922787e+00
## [5897] -1.819118e+00 -4.115447e+00 -4.411771e+00 -4.808092e+00
## [5901] -5.504409e+00 -4.900723e+00 -5.197033e+00 -5.493339e+00
## [5905] -5.989642e+00 -6.485941e+00 -5.282237e+00 -5.178529e+00
## [5909] -5.174817e+00 -5.371102e+00 -6.267384e+00 -6.163661e+00
## [5913] -5.459935e+00 -3.156206e+00 -2.152473e+00 -9.487359e-01
## [5917] -8.449956e-01 -1.412517e-01  1.662496e+00  1.966247e+00
## [5921]  1.870002e+00  9.737598e-01 -5.224784e-01 -2.018713e+00
```

```
## [5925] -2.914944e+00 -3.611171e+00 -4.407395e+00 -4.703616e+00
## [5929] -5.199832e+00 -5.296045e+00 -5.692255e+00 -6.088461e+00
## [5933] -5.884663e+00 -5.580862e+00 -5.577057e+00 -4.673249e+00
## [5937] -3.669437e+00 -2.365621e+00 -1.461802e+00 -2.579797e-01
## [5941]  1.458466e-01 -1.503237e-01 -4.464903e-01  4.573466e-01
## [5945]  3.611870e-01 -7.349689e-01 -1.531121e+00 -2.027270e+00
## [5949] -2.823415e+00 -4.219557e+00 -4.915695e+00 -5.311830e+00
## [5953] -5.207961e+00 -5.804088e+00 -6.400212e+00 -6.596333e+00
## [5957] -6.292450e+00 -5.688563e+00 -5.584673e+00 -5.180779e+00
## [5961] -3.476881e+00 -8.729805e-01 -1.690760e-01  1.034832e+00
## [5965]  1.538744e+00  1.142659e+00  2.446577e+00  2.750500e+00
## [5969]  2.354425e+00  2.258355e+00  7.622874e-01 -9.337762e-01
## [5973] -2.729836e+00 -3.125893e+00 -3.921946e+00 -4.417995e+00
## [5977] -5.514041e+00 -5.910084e+00 -6.306123e+00 -6.702158e+00
## [5981] -7.698190e+00 -7.994218e+00 -8.490243e+00 -7.486264e+00
## [5985] -3.282282e+00 -1.478296e+00  1.025693e+00  2.029686e+00
## [5989]  2.933683e+00  3.437683e+00  3.141686e+00  3.645693e+00
## [5993]  3.449704e+00  2.653718e+00  1.557735e+00  2.617562e-01
## [5997] -1.634219e+00 -2.830191e+00 -3.326160e+00 -3.822124e+00
## [6001] -4.418086e+00 -5.314044e+00 -6.109998e+00 -5.405949e+00
## [6005] -5.001896e+00 -6.497840e+00 -8.393780e+00 -7.289717e+00
## [6009] -4.485651e+00 -9.815803e-01  1.222493e+00  1.926571e+00
## [6013]  2.430651e+00  3.634735e+00  4.538823e+00  5.042914e+00
## [6017]  5.247009e+00  4.851107e+00  3.655209e+00  1.459314e+00
## [6021] -7.365772e-01 -1.332465e+00 -2.528349e+00 -3.024230e+00
## [6025] -3.820107e+00 -4.315981e+00 -4.811852e+00 -5.207719e+00
## [6029] -6.003582e+00 -6.399442e+00 -6.695298e+00 -5.291151e+00
## [6033] -3.687001e+00 -1.682847e+00  1.121311e+00  2.125472e+00
## [6037]  2.829636e+00  3.833804e+00  4.837976e+00  5.342151e+00
## [6041]  4.146329e+00  2.550511e+00  1.654696e+00  4.588850e-01
## [6045] -8.369228e-01 -1.332727e+00 -1.528528e+00 -3.243251e-01
## [6049] -2.011895e-02 -6.159093e-01 -1.211696e+00 -2.807480e+00
## [6053] -4.203260e+00 -4.999036e+00 -4.794809e+00 -4.690579e+00
## [6057] -4.386345e+00 -3.682108e+00 -3.577867e+00 -2.773623e+00
## [6061] -3.769375e+00 -3.365124e+00 -3.660869e+00 -4.556611e+00
## [6065] -5.352349e+00 -6.148085e+00 -6.343816e+00 -6.739544e+00
## [6069] -7.135269e+00 -7.430990e+00 -7.026708e+00 -7.322422e+00
## [6073] -7.018133e+00 -5.913840e+00 -6.009544e+00 -6.305245e+00
## [6077] -6.500942e+00 -6.896636e+00 -7.892326e+00 -7.388013e+00
## [6081] -6.883696e+00 -4.979376e+00 -4.575052e+00 -2.970725e+00
## [6085] -2.266395e+00 -1.562061e+00 -1.957724e+00 -2.253383e+00
## [6089] -2.049039e+00 -1.944692e+00 -2.440341e+00 -4.335986e+00
## [6093] -6.031628e+00 -6.127267e+00 -5.622902e+00 -5.618534e+00
## [6097] -4.714163e+00 -4.209788e+00 -3.805409e+00 -3.801027e+00
## [6101] -3.496642e+00 -3.192253e+00 -3.187861e+00 -2.883466e+00
## [6105] -2.879067e+00 -3.274665e+00 -2.670259e+00 -2.065850e+00
## [6109] -9.614371e-01 -5.702110e-02  6.473983e-01  1.151821e+00
## [6113]  4.562473e-01  6.606770e-01 -2.034890e+00 -3.530454e+00
## [6117] -4.526014e+00 -3.721570e+00 -3.517124e+00 -3.912674e+00
## [6121] -3.808220e+00 -3.803763e+00 -3.999303e+00 -4.094839e+00
## [6125] -3.690372e+00 -3.285902e+00 -4.081428e+00 -5.276951e+00
## [6129] -5.472470e+00 -4.467986e+00 -2.963499e+00 -1.359008e+00
## [6133]  9.454863e-01  3.499839e-01  1.254485e+00  1.958989e+00
## [6137]  1.563497e+00  6.800821e-02 -8.274772e-01 -1.122959e+00
```

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## [6141] -1.518438e+00 -2.313913e+00 -3.009385e+00 -3.004854e+00
## [6145] -2.600319e+00 -2.695781e+00 -2.991239e+00 -2.986694e+00
## [6149] -3.182146e+00 -3.577595e+00 -3.573040e+00 -3.268481e+00
## [6153] -2.963920e+00 -3.059355e+00 -2.254786e+00 -2.550214e+00
## [6157] -2.145639e+00 -2.341061e+00 -2.336479e+00 -2.631894e+00
## [6161] -2.627306e+00 -3.522714e+00 -3.518119e+00 -4.113520e+00
## [6165] -4.508918e+00 -4.604313e+00 -5.099705e+00 -4.695093e+00
## [6169] -5.390478e+00 -5.885860e+00 -6.181238e+00 -6.276613e+00
## [6173] -6.271985e+00 -6.367353e+00 -6.562718e+00 -6.258080e+00
## [6177] -5.453438e+00 -4.048793e+00 -3.044145e+00 -2.839494e+00
## [6181] -3.034839e+00 -3.330181e+00 -3.125520e+00 -2.320855e+00
## [6185] -2.216187e+00 -2.111516e+00 -2.406842e+00 -2.802164e+00
## [6189] -3.297483e+00 -3.992799e+00 -4.088111e+00 -4.183420e+00
## [6193] -4.778726e+00 -5.374029e+00 -5.969328e+00 -5.364624e+00
## [6197] -5.759917e+00 -3.655207e+00 -3.550493e+00 -3.345776e+00
## [6201] -3.141056e+00 -2.636333e+00 -2.131606e+00 -2.126876e+00
## [6205] -1.722143e+00 -2.617406e+00 -2.112667e+00 -2.207924e+00
## [6209] -2.103178e+00 -2.698429e+00 -3.593676e+00 -3.788920e+00
## [6213] -3.984161e+00 -4.279399e+00 -4.474633e+00 -4.269865e+00
## [6217] -4.165093e+00 -4.460318e+00 -4.855539e+00 -4.850758e+00
## [6221] -4.845973e+00 -5.141185e+00 -5.336394e+00 -5.631600e+00
## [6225] -5.026802e+00 -4.322001e+00 -4.117198e+00 -2.612390e+00
## [6229] -8.075801e-01  1.972334e-01  9.020502e-01  1.706870e+00
## [6233]  1.811693e+00  5.165194e-01 -7.786512e-01 -1.273819e+00
## [6237] -1.668983e+00 -1.864144e+00 -1.959302e+00 -1.854456e+00
## [6241] -1.949608e+00 -2.744756e+00 -3.239902e+00 -3.435044e+00
## [6245] -3.730183e+00 -3.725318e+00 -3.720451e+00 -3.515580e+00
## [6249] -3.210707e+00 -2.705830e+00 -2.600950e+00 -2.096067e+00
## [6253] -1.691180e+00 -8.862911e-01  1.018601e+00  3.234971e-01
## [6257]  4.283960e-01 -6.670211e-02 -3.617970e-01 -2.056889e+00
## [6261] -3.651978e+00 -4.047063e+00 -5.242146e+00 -6.137225e+00
## [6265] -6.232301e+00 -7.127374e+00 -7.722444e+00 -7.517511e+00
## [6269] -8.412575e+00 -8.207636e+00 -7.802693e+00 -8.697748e+00
## [6273] -7.492799e+00 -6.187847e+00 -4.482893e+00 -1.477935e+00
## [6277]  9.270263e-01  1.731990e+00  2.636957e+00  1.641928e+00
## [6281]  1.346901e+00  8.518774e-01 -5.431431e-01 -2.238161e+00
## [6285] -2.833175e+00 -3.328186e+00 -3.923195e+00 -4.318200e+00
## [6289] -4.513202e+00 -4.608201e+00 -5.403197e+00 -5.898190e+00
## [6293] -5.993180e+00 -5.788167e+00 -8.683151e+00 -7.578131e+00
## [6297] -5.573109e+00 -2.968084e+00 -1.630553e-01  6.419761e-01
## [6301]  1.347011e+00  1.752048e+00  2.357089e+00  3.162132e+00
## [6305]  3.267179e+00  3.172228e+00  6.772809e-01 -9.176635e-01
## [6309] -2.412605e+00 -2.407543e+00 -2.302478e+00 -1.897411e+00
## [6313] -1.792340e+00 -1.687266e+00 -1.782190e+00 -1.777110e+00
## [6317] -1.972027e+00 -1.866941e+00 -1.661853e+00 -8.567608e-01
## [6321] -2.516661e-01  1.153432e+00  2.658532e+00  4.863636e+00
## [6325]  5.468743e+00  6.573852e+00  6.078965e+00  6.184081e+00
## [6329]  5.889199e+00  4.694321e+00  3.699445e+00  2.704573e+00
## [6333]  1.709703e+00  1.714837e+00  7.199733e-01  3.251126e-01
## [6337]  2.302550e-01 -1.645997e-01  1.405485e-01  4.456997e-01
## [6341]  2.508539e-01  2.560110e-01  4.611710e-01  5.663340e-01
## [6345]  9.715000e-01  1.776669e+00  2.881841e+00  3.987015e+00
## [6349]  4.892193e+00  5.097374e+00  4.802557e+00  4.707744e+00
## [6353]  3.912933e+00  2.718125e+00  1.623321e+00  5.285188e-01
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## [6357]    1.337199e-01 -3.610761e-01 -8.558692e-01 -7.506594e-01
## [6361]   -9.454467e-01 -1.040231e+00 -6.350125e-01 -1.329791e+00
## [6365]   -1.424567e+00 -1.519340e+00 -1.514109e+00 -6.088764e-01
## [6369]    8.963595e-01  2.301598e+00  3.706840e+00  4.712085e+00
## [6373]    4.917332e+00  5.422582e+00  4.727836e+00  4.433092e+00
## [6377]    3.438351e+00  2.343612e+00  1.948877e+00  3.541447e-01
## [6381]   -7.405849e-01 -1.135312e+00 -9.300355e-01 -7.247565e-01
## [6385]   -7.194746e-01 -5.141899e-01 -8.089023e-01 -1.003612e+00
## [6389]   -6.983186e-01 -1.493022e+00 -2.087724e+00 -2.282422e+00
## [6393]   -1.177117e+00  4.281904e-01  2.033501e+00  2.838814e+00
## [6397]    3.044130e+00  4.049449e+00  3.654770e+00  4.860095e+00
## [6401]    4.265422e+00  2.670752e+00  1.176085e+00 -1.118579e+00
## [6405]   -1.013241e+00 -9.078994e-01 -7.025552e-01 -8.972082e-01
## [6409]   -4.918584e-01 -2.865059e-01 -8.115048e-02  2.242077e-01
## [6413]    2.295687e-01  7.349324e-01  4.402990e-01  8.456684e-01
## [6417]    1.451040e+00  1.656415e+00  2.161793e+00  2.567174e+00
## [6421]    3.072557e+00  3.477943e+00  3.583332e+00  3.188723e+00
## [6425]    3.594118e+00  2.999515e+00  1.804915e+00  1.910317e+00
## [6429]    1.615723e+00  1.621131e+00  1.526542e+00  1.831956e+00
## [6433]    2.137372e+00  2.242791e+00  2.148213e+00  1.453638e+00
## [6437]    1.459065e+00  1.564496e+00  1.569929e+00  1.875364e+00
## [6441]    1.680803e+00  2.186244e+00  2.091688e+00  1.997134e+00
## [6445]    2.602584e+00  2.308036e+00  2.113491e+00  2.418948e+00
## [6449]    2.724408e+00  2.729871e+00  2.535337e+00  2.640806e+00
## [6453]    2.846277e+00  3.051751e+00  3.357227e+00  2.962707e+00
## [6457]    3.168189e+00  2.973674e+00  3.079161e+00  2.784652e+00
## [6461]    2.590145e+00  2.395641e+00  2.301139e+00  2.406640e+00
## [6465]    2.612144e+00  3.917651e+00  5.123160e+00  6.228672e+00
## [6469]    7.134187e+00  7.539705e+00  8.045225e+00  7.250748e+00
## [6473]    6.956274e+00  5.761802e+00  3.667333e+00  2.472867e+00
## [6477]    1.078404e+00  1.839432e-01  2.894853e-01 -2.049700e-01
## [6481]   -3.994226e-01 -1.493872e+00 -1.388319e+00  3.172361e-01
## [6485]    3.227944e-01  9.283554e-01  1.433919e+00  1.839486e+00
## [6489]    2.545055e+00  3.150627e+00  4.056201e+00  4.761779e+00
## [6493]    4.767359e+00  6.272941e+00  6.778527e+00  7.384115e+00
## [6497]    7.189706e+00  6.495299e+00  3.900895e+00  3.006494e+00
## [6501]    1.912096e+00  7.177003e-01  3.233073e-01  8.289171e-01
## [6505]    1.834530e+00  4.401447e-01  3.457625e-01  2.513831e-01
## [6509]    4.570063e-01  1.626323e-01 -8.317391e-01 -1.261077e-01
## [6513]    1.079526e+00  2.285163e+00  4.190802e+00  4.396445e+00
## [6517]    5.602089e+00  5.607737e+00  5.713387e+00  5.719040e+00
## [6521]    6.024696e+00  4.730354e+00  2.636015e+00  2.141679e+00
## [6525]    1.547345e+00  5.530141e-01  2.586858e-01  3.643602e-01
## [6529]    7.003737e-02 -5.242828e-01 -1.218600e+00 -6.129152e-01
## [6533]   -3.072273e-01  9.846327e-02  1.041565e-01  2.098524e-01
## [6537]    8.155510e-01  2.221252e+00  3.326956e+00  4.232663e+00
## [6541]    4.338372e+00  2.844084e+00  5.749799e+00  5.055516e+00
## [6545]    4.061236e+00  2.866959e+00  1.272685e+00  2.784126e-01
## [6549]    1.841434e-01  4.898768e-01 -8.043871e-01 -1.198648e+00
## [6553]   -1.592907e+00 -2.387163e+00 -2.281416e+00 -2.375666e+00
## [6557]   -2.669914e+00 -2.664159e+00 -2.858402e+00 -6.526418e-01
## [6561]    6.531211e-01  1.358887e+00  2.664655e+00  2.370426e+00
## [6565]    4.576199e+00  4.381975e+00  5.687754e+00  4.893536e+00
## [6569]    5.099320e+00  4.005107e+00  3.110896e+00  2.616688e+00
```

```
## [6573]  2.022483e+00  1.728281e+00  1.634081e+00  1.739884e+00
## [6577]  1.545689e+00  2.651497e+00  2.257308e+00  1.463121e+00
## [6581]  8.689376e-01  3.747564e-01  9.805778e-01  1.386402e+00
## [6585]  2.092229e+00  3.098058e+00  3.503890e+00  4.009725e+00
## [6589]  4.915562e+00  4.621402e+00  4.527245e+00  4.133090e+00
## [6593]  3.938938e+00  3.444789e+00  2.450642e+00  1.556498e+00
## [6597]  3.623565e-01 -1.317823e-01 -5.259184e-01 -7.200519e-01
## [6601] -1.214183e+00 -1.508311e+00 -1.202436e+00 -2.596559e+00
## [6605] -2.890680e+00 -1.984797e+00 -1.678912e+00 -6.730245e-01
## [6609]  6.328658e-01  2.238759e+00  2.244654e+00  3.850553e+00
## [6613]  4.556454e+00  5.262357e+00  2.668263e+00  1.774172e+00
## [6617]  2.580083e+00  2.285998e+00  2.091914e+00  1.797834e+00
## [6621]  1.803756e+00  1.309680e+00  1.215607e+00  8.215374e-01
## [6625] -6.725301e-01 -1.066595e+00 -9.606572e-01 -2.354717e+00
## [6629] -2.648774e+00 -2.042828e+00 -2.136880e+00 -1.530929e+00
## [6633]  7.502483e-02  1.480981e+00  3.286940e+00  3.392901e+00
## [6637]  4.098865e+00  4.304832e+00  3.910801e+00  3.716773e+00
## [6641]  3.722748e+00  1.828725e+00  1.934705e+00  1.940687e+00
## [6645]  2.046673e+00  1.652660e+00  1.258651e+00  1.164644e+00
## [6649] -4.293610e-01 -6.233628e-01 -9.173620e-01 -1.211359e+00
## [6653] -1.405353e+00 -1.599344e+00 -1.293333e+00 -1.487319e+00
## [6657] -1.481303e+00 -3.752841e-01  1.330737e+00  1.736761e+00
## [6661]  3.042788e+00  3.448817e+00  2.354849e+00  1.660883e+00
## [6665] -1.233080e+00 -6.270405e-01 -1.220999e+00 -2.714954e+00
## [6669] -3.408907e+00 -4.202857e+00 -4.996805e+00 -5.090751e+00
## [6673] -5.284693e+00 -6.178634e+00 -6.472571e+00 -6.966507e+00
## [6677] -7.860439e+00 -7.854370e+00 -8.348297e+00 -7.142223e+00
## [6681] -5.536145e+00 -3.030065e+00 -7.239832e-01  1.182102e+00
## [6685]  1.388189e+00  7.942786e-01  6.003708e-01  4.064656e-01
## [6689] -4.874373e-01 -3.813376e-01 -2.752355e-01  3.308691e-01
## [6693]  7.369762e-01  1.343086e+00  2.049198e+00  1.955312e+00
## [6697]  2.861429e+00  2.967548e+00  3.673670e+00  4.479794e+00
## [6701]  4.485921e+00  4.492050e+00  4.698181e+00  4.404315e+00
## [6705]  2.510452e+00  2.216590e+00  2.722731e+00  3.328875e+00
## [6709]  4.435021e+00  5.741169e+00  5.947320e+00  4.353473e+00
## [6713]  3.759629e+00  2.865787e+00  1.471947e+00  8.781097e-01
## [6717]  1.842748e-01 -7.095578e-01 -1.203388e+00 -2.197216e+00
## [6721] -2.391041e+00 -1.884864e+00 -1.778685e+00 -1.472503e+00
## [6725] -1.066319e+00 -9.601330e-01 -1.153944e+00 -5.477533e-01
## [6729]  2.558440e+00  5.464636e+00  4.670834e+00  5.077034e+00
## [6733]  3.383237e+00  4.189442e+00  4.995649e+00  5.301859e+00
## [6737]  4.308071e+00  3.014285e+00  2.220501e+00  1.026720e+00
## [6741] -6.705853e-02 -6.608351e-01 -1.654609e+00 -2.748381e+00
## [6745] -3.242151e+00 -3.435918e+00 -3.929684e+00 -4.923447e+00
## [6749] -5.417207e+00 -5.410965e+00 -5.004722e+00 -5.598475e+00
## [6753] -4.192227e+00 -3.085976e+00 -1.679723e+00 -5.734681e-01
## [6757]  8.327893e-01  1.139049e+00  8.453108e-01  3.515750e-01
## [6761]  5.784131e-02 -4.358901e-01 -7.296193e-01 -1.023346e+00
## [6765] -8.170712e-01 -9.107938e-01 -1.204514e+00 -8.982324e-01
## [6769] -7.919484e-01 -4.856623e-01  2.062608e-02  6.269166e-01
## [6773]  1.033209e+00  1.139504e+00  1.245801e+00  1.252100e+00
## [6777]  1.458402e+00  1.864705e+00  2.571011e+00  2.777318e+00
## [6781]  3.283628e+00  3.289940e+00  4.196254e+00  4.102571e+00
## [6785]  4.108889e+00  4.015209e+00  3.721532e+00  3.327857e+00
```

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## [6789]  3.334183e+00  3.840512e+00  3.746843e+00  3.353176e+00
## [6793]  2.459511e+00  2.465848e+00  1.272188e+00  5.785289e-01
## [6797] -5.151278e-01 -1.608782e+00 -1.702435e+00 -3.096085e+00
## [6801] -2.489734e+00 -2.183380e+00 -1.177025e+00  2.229333e+00
## [6805]  3.235693e+00  3.442054e+00  4.048418e+00  3.854784e+00
## [6809]  3.761151e+00  2.867521e+00  2.673893e+00  3.180266e+00
## [6813]  3.086642e+00  2.993020e+00  3.699399e+00  3.905781e+00
## [6817]  4.112164e+00  3.718550e+00  3.624937e+00  3.631327e+00
## [6821]  3.637718e+00  3.744112e+00  3.650507e+00  3.856904e+00
## [6825]  3.863303e+00  4.769704e+00  4.876107e+00  5.782512e+00
## [6829]  6.588919e+00  6.495328e+00  6.501738e+00  7.408151e+00
## [6833]  5.914565e+00  5.120981e+00  4.627400e+00  4.333820e+00
## [6837]  4.140241e+00  4.446665e+00  4.353091e+00  2.659518e+00
## [6841]  1.665948e+00  1.572379e+00  1.878812e+00  1.685247e+00
## [6845]  1.391684e+00  1.598122e+00  1.804563e+00  1.711005e+00
## [6849]  1.417449e+00  1.723895e+00  1.430343e+00  1.436792e+00
## [6853]  1.243243e+00  1.949697e+00  2.656151e+00  2.262608e+00
## [6857]  5.690665e-01 -5.244733e-01 -1.518011e+00 -2.211547e+00
## [6861] -2.005082e+00 -2.398615e+00 -3.392146e+00 -4.085675e+00
## [6865] -5.279202e+00 -5.272728e+00 -4.466252e+00 -4.359774e+00
## [6869] -4.253295e+00 -3.946814e+00 -3.840331e+00 -4.533846e+00
## [6873] -3.227360e+00 -2.620872e+00 -1.314382e+00 -6.078904e-01
## [6877] -3.013972e-01  8.050976e-01  3.115941e-01 -5.819077e-01
## [6881] -7.540789e-02 -2.689064e-01 -7.624032e-01 -7.558983e-01
## [6885] -1.049392e+00 -1.242884e+00 -2.036374e+00 -2.629862e+00
## [6889] -1.523349e+00 -7.168347e-01 -1.031841e-02 -2.038005e-01
## [6893]  5.027191e-01  5.092403e-01  8.157630e-01  1.222287e+00
## [6897]  1.228813e+00  1.035341e+00  2.418701e-01 -2.515991e-01
## [6901]  5.493323e-02  1.261467e+00  1.168003e+00  1.474540e+00
## [6905]  1.081078e+00  5.876184e-01  1.094160e+00  7.007034e-01
## [6909]  6.072482e-01  6.137946e-01  7.203424e-01  3.268918e-01
## [6913]  4.334428e-01  2.399952e-01  3.465492e-01 -4.468953e-01
## [6917] -4.033832e-02  6.622017e-02  1.727802e-01 -2.065836e-02
## [6921]  1.859046e-01  9.246906e-02  9.903499e-02  3.056024e-01
## [6925]  6.121713e-01 -8.125838e-02 -7.746866e-01 -4.681133e-01
## [6929] -1.615386e-01 -6.549625e-01 -9.483849e-01 -7.418058e-01
## [6933] -1.035225e+00 -1.228643e+00 -1.022060e+00 -1.315475e+00
## [6937] -1.508889e+00 -1.802302e+00 -2.195713e+00 -2.989122e+00
## [6941] -3.882531e+00 -3.775937e+00 -3.869343e+00 -3.762747e+00
## [6945] -3.056150e+00 -1.349551e+00 -4.429509e-01  4.636505e-01
## [6949]  1.270253e+00  2.076857e+00  1.283463e+00  1.090070e+00
## [6953]  6.966779e-01 -1.696713e+00 -2.990102e+00 -3.783490e+00
## [6957] -4.476876e+00 -4.870261e+00 -5.263645e+00 -5.157028e+00
## [6961] -5.650409e+00 -5.443789e+00 -4.637168e+00 -3.730545e+00
## [6965] -4.023921e+00 -2.417296e+00 -2.610670e+00 -2.904042e+00
## [6969] -2.497413e+00 -2.907825e-01  1.115849e+00  1.722482e+00
## [6973]  3.129116e+00  2.935751e+00  3.042388e+00  2.249025e+00
## [6977]  1.855664e+00  7.623045e-01 -2.310541e-01 -3.244115e-01
## [6981] -3.177676e-01  8.887743e-02  9.552369e-02  1.021711e-01
## [6985]  5.088198e-01  5.154696e-01  6.221207e-01  7.287729e-01
## [6989]  5.354263e-01  4.420808e-01  3.487365e-01  1.553934e-01
## [6993]  3.620514e-01  8.687106e-01  1.175371e+00  9.820325e-01
## [6997]  9.886951e-01  7.953588e-01  1.102024e+00  9.086897e-01
## [7001]  1.153569e-01 -7.797490e-02 -7.130554e-02 -1.646351e-01
```

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## [7005] -1.579635e-01 -1.512909e-01 -1.446171e-01 -4.379423e-01
## [7009] -4.312663e-01 -3.245893e-01 -2.179112e-01 -1.112321e-01
## [7013] -2.045519e-01 -2.978706e-01  2.088117e-01  1.154951e-01
## [7017]  4.221795e-01  6.288650e-01  1.435552e+00  1.142239e+00
## [7021]  2.548928e+00  2.955617e+00  2.162308e+00  2.368999e+00
## [7025]  2.475692e+00  1.482386e+00  3.890804e-01 -1.042240e-01
## [7029] -8.975273e-01 -8.908297e-01 -1.084131e+00 -1.377432e+00
## [7033] -2.270731e+00 -3.664029e+00 -3.457327e+00 -3.750624e+00
## [7037] -3.143919e+00 -2.837214e+00 -2.730508e+00 -2.423800e+00
## [7041] -1.417092e+00 -1.010383e+00 -8.036730e-01 -9.696201e-02
## [7045] -4.902501e-01 -7.835374e-01 -8.768237e-01 -9.701091e-01
## [7049] -7.633936e-01 -1.556677e+00 -1.849960e+00 -2.143242e+00
## [7053] -2.336523e+00 -1.329803e+00 -1.423082e+00 -2.316360e+00
## [7057] -3.409638e+00 -4.102914e+00 -5.396190e+00 -4.489465e+00
## [7061] -4.582739e+00 -5.376012e+00 -5.969285e+00 -4.262556e+00
## [7065] -1.955827e+00 -1.349097e+00 -8.423660e-01 -3.563434e-02
## [7069]  8.710982e-01  1.377832e+00  1.384566e+00  1.591301e+00
## [7073]  1.098036e+00  4.047727e-01  8.115100e-01 -2.817519e-01
## [7077] -9.750131e-01 -1.268274e+00 -1.561533e+00 -2.754792e+00
## [7081] -3.148050e+00 -4.341308e+00 -3.034564e+00 -3.627820e+00
## [7085] -3.021075e+00 -2.814330e+00 -3.307584e+00 -3.700837e+00
## [7089] -3.294089e+00 -1.087340e+00  9.194087e-01  1.326159e+00
## [7093]  2.532909e+00  3.539660e+00  3.546412e+00  2.953165e+00
## [7097]  2.559918e+00  2.166672e+00  1.473427e+00  9.801818e-01
## [7101]  1.286938e+00  1.593694e+00  2.600452e+00  3.207209e+00
## [7105]  2.813968e+00  2.820727e+00  2.627487e+00  2.534247e+00
## [7109]  2.341008e+00  2.247770e+00  2.354532e+00  2.261295e+00
## [7113]  2.268059e+00  2.674823e+00  3.381588e+00  4.188353e+00
## [7117]  3.595119e+00  3.601885e+00  3.608652e+00  4.115420e+00
## [7121]  3.722188e+00  2.028957e+00  1.235726e+00  9.424960e-01
## [7125]  1.049266e+00  5.560373e-01 -1.137191e+00 -2.630419e+00
## [7129] -3.223647e+00 -3.716873e+00 -3.810100e+00 -4.103326e+00
## [7133] -4.096551e+00 -3.789776e+00 -3.583000e+00 -3.676224e+00
## [7137] -3.769448e+00 -8.626704e-01  1.244107e+00  2.550885e+00
## [7141]  3.357664e+00  3.264443e+00  3.171223e+00  3.378002e+00
## [7145]  1.684783e+00  9.156383e-02 -5.016548e-01 -3.948730e-01
## [7149] -1.088091e+00 -5.813082e-01 -1.274525e+00 -1.967742e+00
## [7153] -8.609576e-01  4.582676e-02  4.526115e-01  7.593967e-01
## [7157]  1.066182e+00  1.372968e+00  1.779755e+00  2.186541e+00
## [7161]  2.493329e+00  2.700116e+00  3.606904e+00  4.513692e+00
## [7165]  4.820481e+00  5.727270e+00  5.534059e+00  4.940849e+00
## [7169]  4.447639e+00  4.154429e+00  3.361220e+00  3.068011e+00
## [7173]  2.874803e+00  1.681594e+00  1.688386e+00  1.095179e+00
## [7177]  1.001971e+00  7.087643e-01  7.155576e-01  7.223512e-01
## [7181]  6.291451e-01  4.359392e-01  1.427336e-01  1.495284e-01
## [7185]  4.563234e-01  9.631186e-01  1.669914e+00  2.476710e+00
## [7189]  2.883506e+00  3.190302e+00  3.197099e+00  3.003896e+00
## [7193]  3.210693e+00  2.217490e+00  2.224287e+00  1.731085e+00
## [7197]  1.337883e+00  1.144681e+00  2.514794e-01  2.582780e-01
## [7201] -1.349233e-01 -2.812433e-02 -1.213252e-01 -1.452587e-02
## [7205] -7.726362e-03  9.907332e-02  3.058732e-01  6.126732e-01
## [7209]  1.019473e+00  1.626274e+00  2.133074e+00  3.139875e+00
## [7213]  3.346676e+00  3.753477e+00  3.660278e+00  3.667079e+00
## [7217]  3.273880e+00  2.880682e+00  2.587483e+00  2.494285e+00
```

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## [7221]  2.301087e+00  2.207889e+00  2.114691e+00  2.021493e+00
## [7225]  1.028295e+00  1.635097e+00  2.241900e+00  1.648702e+00
## [7229]  1.455504e+00  1.462307e+00  1.269110e+00  1.075912e+00
## [7233]  1.182715e+00  1.389518e+00  1.496321e+00  1.803124e+00
## [7237]  1.909926e+00  2.016729e+00  2.423532e+00  2.330335e+00
## [7241]  2.037138e+00  2.043941e+00  1.950744e+00  1.657547e+00
## [7245]  1.664350e+00  1.871153e+00  1.777956e+00  1.484759e+00
## [7249]  7.915624e-01  9.983653e-01  1.051682e-01 -8.802891e-02
## [7253] -2.812261e-01 -7.744233e-01 -7.676205e-01 -7.608178e-01
## [7257] -6.540152e-01 -5.472126e-01  6.595899e-01 -3.360768e-02
## [7261]  2.731947e-01  2.799970e-01  3.867992e-01  3.936013e-01
## [7265]  2.004033e-01  5.072052e-01  5.140070e-01  6.208087e-01
## [7269]  1.027610e+00  1.034412e+00  1.341213e+00  1.648014e+00
## [7273]  1.754815e+00  1.861616e+00  2.168417e+00  2.075218e+00
## [7277]  2.082018e+00  2.088819e+00  1.795619e+00  1.902419e+00
## [7281]  1.909219e+00  2.016019e+00  2.022818e+00  1.629618e+00
## [7285]  1.336417e+00  1.443216e+00  1.550015e+00  1.356813e+00
## [7289]  1.063612e+00  8.704097e-01  8.772077e-01  7.840054e-01
## [7293]  8.908029e-01 -3.023998e-01 -5.956027e-01 -9.888059e-01
## [7297] -1.982009e+00 -2.475213e+00 -2.168417e+00 -2.761621e+00
## [7301] -2.754826e+00 -3.248030e+00 -3.241235e+00 -4.034440e+00
## [7305] -4.327646e+00 -2.820852e+00 -1.714058e+00 -1.207264e+00
## [7309] -7.004708e-01  4.063222e-01  7.131149e-01  9.199074e-01
## [7313]  3.266995e-01 -1.466509e+00 -2.359717e+00 -3.152926e+00
## [7317] -3.546135e+00 -3.039345e+00 -3.032555e+00 -3.425765e+00
## [7321] -3.318976e+00 -2.512187e+00 -2.105398e+00 -1.798610e+00
## [7325] -1.891822e+00 -1.785034e+00 -1.578247e+00 -1.171460e+00
## [7329] -3.646735e-01  4.421126e-01  1.448898e+00  2.055683e+00
## [7333]  2.462468e+00  2.469253e+00  3.076037e+00  2.082820e+00
## [7337]  1.789604e+00  1.296386e+00  1.003169e+00  5.099504e-01
## [7341] -8.326815e-02 -2.764872e-01 -2.697067e-01 -1.162927e+00
## [7345] -4.561470e-01 -1.049368e+00 -3.425892e-01 -2.358110e-01
## [7349] -2.290333e-01 -4.222561e-01 -1.415479e+00 -2.308703e+00
## [7353] -2.301927e+00 -9.951521e-01 -2.883774e-01  1.318397e+00
## [7357]  1.625171e+00  1.631944e+00  1.438716e+00  1.345489e+00
## [7361]  5.226012e-02 -2.240969e+00 -3.134198e+00 -4.127428e+00
## [7365] -6.120659e+00 -5.413890e+00 -6.907122e+00 -6.900354e+00
## [7369] -6.893587e+00 -6.686820e+00 -8.180054e+00 -8.273289e+00
## [7373] -8.666524e+00 -9.259760e+00 -9.052996e+00 -9.146233e+00
## [7377] -8.739471e+00 -8.532709e+00 -7.625948e+00 -6.919188e+00
## [7381] -5.812428e+00 -4.105668e+00 -1.798910e+00 -1.921517e-01
## [7385] -7.853943e-01 -2.078638e+00 -3.371882e+00 -3.565126e+00
## [7389] -3.658371e+00 -5.451617e+00 -8.244864e+00 -8.938111e+00
## [7393] -8.731359e+00 -9.524608e+00 -9.417857e+00 -9.311107e+00
## [7397] -9.104358e+00 -1.029761e+01 -9.590862e+00 -9.384115e+00
## [7401] -8.277368e+00 -6.170622e+00 -2.763878e+00 -8.571333e-01
## [7405]  4.496102e-01  1.356353e+00  1.663095e+00  1.669836e+00
## [7409]  4.765766e-01 -2.166837e-01  2.900553e-01  8.967935e-01
## [7413]  8.035309e-01  1.510268e+00  1.417003e+00  1.523738e+00
## [7417]  9.304727e-01  7.372061e-01  1.043939e+00  1.550671e+00
## [7421]  1.857402e+00  9.641318e-01 -4.291388e-01 -9.224103e-01
## [7425] -7.156826e-01 -4.089557e-01  1.397770e+00  2.704495e+00
## [7429]  3.811220e+00  4.117943e+00  4.824666e+00  4.331387e+00
## [7433]  2.838108e+00  1.944828e+00  4.515472e-01 -1.341735e+00
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## [7437] -1.235018e+00 -5.283012e-01 -1.921586e+00 -8.148713e-01
## [7441] -4.081578e-01 -1.445199e-03 -9.473353e-02  3.119772e-01
## [7445]  8.186870e-01  1.225396e+00  1.432104e+00  1.838811e+00
## [7449]  1.545516e+00  1.552221e+00  1.558925e+00  2.265628e+00
## [7453]  3.172330e+00  4.079031e+00  4.385731e+00  4.292430e+00
## [7457]  3.999128e+00  3.905825e+00  3.512521e+00  2.919216e+00
## [7461]  2.025910e+00  1.332603e+00  8.392943e-01  4.598498e-02
## [7465]  1.526746e-01 -4.406368e-01 -1.933949e+00 -3.927263e+00
## [7469] -2.320578e+00 -4.313893e+00 -4.607210e+00 -3.800528e+00
## [7473] -3.893847e+00 -1.087167e+00  9.195113e-01  3.226189e+00
## [7477]  4.132865e+00  4.339541e+00  4.146215e+00  3.852888e+00
## [7481]  2.059560e+00 -7.337695e-01 -1.627100e+00 -1.520431e+00
## [7485] -1.813764e+00 -2.407098e+00 -2.700433e+00 -3.793770e+00
## [7489] -3.987107e+00 -3.980446e+00 -3.273786e+00 -4.267127e+00
## [7493] -4.160469e+00 -3.753813e+00 -4.347158e+00 -4.840504e+00
## [7497] -4.133851e+00 -4.327199e+00 -5.205490e-01  2.086100e+00
## [7501]  4.392748e+00  4.299394e+00  3.406039e+00  2.512683e+00
## [7505]  1.519326e+00  2.259673e-01 -8.673927e-01 -1.860754e+00
## [7509] -2.054117e+00 -2.247480e+00 -2.740846e+00 -3.234212e+00
## [7513] -3.427580e+00 -3.820949e+00 -4.614320e+00 -4.407691e+00
## [7517] -4.701065e+00 -3.794439e+00 -2.287815e+00 -2.481192e+00
## [7521] -4.174571e+00 -1.867951e+00  6.386675e-01  2.245285e+00
## [7525]  3.951900e+00  3.958515e+00  4.165128e+00  3.171739e+00
## [7529]  1.478350e+00  1.849583e-01 -1.308434e+00 -1.801828e+00
## [7533] -1.495224e+00 -1.688621e+00 -1.882019e+00 -2.375419e+00
## [7537] -2.068821e+00 -2.562224e+00 -2.055628e+00 -1.149034e+00
## [7541] -1.042441e+00 -1.035850e+00 -5.292600e-01  7.732821e-02
## [7545]  8.391495e-02  6.905002e-01  1.197084e+00  3.036661e-01
## [7549] -2.897533e-01  1.682588e-02 -6.765965e-01 -9.700205e-01
## [7553] -1.263446e+00 -1.856873e+00 -2.250302e+00 -2.643732e+00
## [7557] -3.237164e+00 -3.930597e+00 -4.824032e+00 -5.317468e+00
## [7561] -5.010906e+00 -5.304346e+00 -6.097787e+00 -6.091230e+00
## [7565] -6.184675e+00 -6.178121e+00 -6.171568e+00 -6.265018e+00
## [7569] -5.958469e+00 -5.851921e+00 -5.145376e+00 -3.338831e+00
## [7573] -1.132289e+00  7.742517e-01  1.080791e+00  7.873283e-01
## [7577] -6.135970e-03 -1.799602e+00 -2.293070e+00 -2.286539e+00
## [7581] -1.880010e+00 -1.973483e+00 -2.366957e+00 -3.360433e+00
## [7585] -2.653911e+00 -2.747390e+00 -2.640872e+00 -2.234355e+00
## [7589] -2.127840e+00 -2.121326e+00 -2.014814e+00 -1.808304e+00
## [7593] -1.501796e+00 -1.195290e+00 -7.887850e-01 -5.822821e-01
## [7597] -6.757810e-01 -4.692817e-01 -4.627842e-01 -5.562884e-01
## [7601] -9.497945e-01 -8.433024e-01 -7.368121e-01 -5.303236e-01
## [7605] -4.238370e-01 -4.173521e-01 -3.108691e-01  1.956120e-01
## [7609]  4.020913e-01  5.085687e-01  8.150443e-01  6.215180e-01
## [7613]  1.279899e-01  2.344599e-01  3.409280e-01  4.473942e-01
## [7617] -4.614151e-02 -2.396791e-01  3.667814e-01  9.732401e-01
## [7621]  2.079697e+00  1.686152e+00  1.892604e+00  1.399055e+00
## [7625]  9.055044e-01  2.119514e-01 -7.816034e-01 -2.751603e-01
## [7629] -9.687190e-01 -1.262280e+00 -1.655842e+00 -2.149407e+00
## [7633] -2.642974e+00 -3.136542e+00 -3.630113e+00 -3.823686e+00
## [7637] -2.817260e+00 -3.310837e+00 -3.204416e+00 -3.997996e+00
## [7641] -3.591579e+00 -2.885164e+00 -1.978750e+00 -1.672339e+00
## [7645] -1.165930e+00 -8.595226e-01 -9.531175e-01 -1.046714e+00
## [7649] -6.403134e-01 -7.339145e-01 -7.275176e-01 -8.211228e-01
```

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## [7653] -1.214730e+00 -1.408340e+00 -1.801951e+00 -2.095565e+00
## [7657] -2.289180e+00 -2.382798e+00 -2.476418e+00 -2.470040e+00
## [7661] -2.663664e+00 -2.757290e+00 -2.850919e+00 -3.044549e+00
## [7665] -3.138182e+00 -2.331817e+00 -1.725454e+00 -1.319093e+00
## [7669] -3.127347e-01  6.936218e-01  1.399976e+00  1.706328e+00
## [7673]  1.512678e+00  1.719026e+00  1.325371e+00  9.317146e-01
## [7677]  8.380557e-01  4.443946e-01  5.073123e-02  9.570656e-01
## [7681]  1.633978e-01  4.697278e-01  1.176055e+00  1.482381e+00
## [7685]  1.888704e+00  1.895025e+00  2.201344e+00  2.207660e+00
## [7689]  2.213974e+00  1.820286e+00  2.226596e+00  2.332903e+00
## [7693]  2.439208e+00  2.745511e+00  2.851811e+00  3.158109e+00
## [7697]  2.964405e+00  2.970698e+00  3.076989e+00  2.783278e+00
## [7701]  2.789564e+00  2.695848e+00  3.202130e+00  3.508410e+00
## [7705]  3.314686e+00  1.720961e+00  1.227233e+00  1.033503e+00
## [7709]  1.397707e-01 -6.539642e-01 -8.477015e-01 -1.041441e+00
## [7713] -1.135183e+00  4.710722e-01  2.377325e+00  3.983576e+00
## [7717]  4.189824e+00  4.496070e+00  4.302313e+00  4.708554e+00
## [7721]  2.714793e+00  1.121029e+00  5.272622e-01  2.334933e-01
## [7725]  4.397219e-01  4.459480e-01  1.252172e+00  1.458393e+00
## [7729]  1.364612e+00  1.270828e+00  1.677041e+00  1.883253e+00
## [7733]  1.989461e+00  1.595667e+00  1.301871e+00  1.108072e+00
## [7737]  1.014271e+00  1.620467e+00  2.526660e+00  3.132851e+00
## [7741]  3.939040e+00  4.945225e+00  4.651409e+00  4.457589e+00
## [7745]  3.463768e+00  2.769943e+00  2.676116e+00  2.182286e+00
## [7749]  1.888454e+00  2.694619e+00  3.000782e+00  3.006942e+00
## [7753]  3.213099e+00  3.319254e+00  2.825406e+00  2.831555e+00
## [7757]  3.137702e+00  3.243846e+00  3.049988e+00  3.056126e+00
## [7761]  3.162263e+00  3.368396e+00  3.674527e+00  4.280655e+00
## [7765]  4.486781e+00  4.292903e+00  4.199023e+00  3.505141e+00
## [7769]  3.711255e+00  3.417367e+00  2.923477e+00  2.929583e+00
## [7773]  2.835687e+00  2.941788e+00  2.947886e+00  2.853982e+00
## [7777]  2.860075e+00  2.666165e+00  2.672252e+00  2.678337e+00
## [7781]  2.684419e+00  2.490498e+00  2.396574e+00  2.302647e+00
## [7785]  2.108718e+00  1.914786e+00  1.520851e+00  1.326913e+00
## [7789]  1.232973e+00  1.439029e+00  1.645083e+00  1.751134e+00
## [7793]  1.557182e+00  1.563228e+00  1.069270e+00  9.753098e-01
## [7797]  9.813465e-01  7.873804e-01  6.934115e-01  5.994396e-01
## [7801]  4.054649e-01  5.114873e-01  5.175069e-01  6.235235e-01
## [7805]  7.295372e-01  5.355481e-01  4.415560e-01  3.475610e-01
## [7809]  3.535631e-01  4.595623e-01  6.655585e-01  9.715518e-01
## [7813]  1.577542e+00  1.683530e+00  1.689514e+00  1.395496e+00
## [7817]  1.101474e+00  1.007450e+00  8.134223e-01  8.193919e-01
## [7821]  9.253585e-01  9.313222e-01  9.372829e-01  5.432405e-01
## [7825]  8.491952e-01  1.355147e+00  2.161095e+00  2.167041e+00
## [7829]  2.272984e+00  2.178923e+00  1.884860e+00  1.290793e+00
## [7833]  9.967236e-01  7.026510e-01  1.008575e+00  1.014497e+00
## [7837]  1.120415e+00  1.226330e+00  5.322419e-01  2.381508e-01
## [7841] -1.559433e-01  4.995947e-02 -5.441408e-01 -6.382442e-01
## [7845] -7.323506e-01 -2.026460e+00 -2.720573e+00 -3.114689e+00
## [7849] -3.808807e+00 -3.802929e+00 -3.997054e+00 -4.391182e+00
## [7853] -3.985313e+00 -4.079448e+00 -4.373585e+00 -4.567726e+00
## [7857] -4.261869e+00 -4.056016e+00 -2.450166e+00 -6.443184e-01
## [7861] -3.847440e-02 -1.326335e-01 -2.679568e-02 -8.209610e-01
## [7865] -1.415129e+00 -1.009301e+00 -1.103476e+00 -1.497653e+00
```

```
## [7869] -2.191834e+00 -3.086018e+00 -3.580205e+00 -3.774396e+00
## [7873] -3.568589e+00 -3.562785e+00 -3.556985e+00 -2.951188e+00
## [7877] -3.045394e+00 -1.939603e+00 -9.338146e-01 -2.802986e-02
## [7881]  5.777518e-01  1.283530e+00  2.589306e+00  2.995078e+00
## [7885]  3.800847e+00  4.206613e+00  4.612376e+00  5.018135e+00
## [7889]  4.723892e+00  4.429645e+00  4.335395e+00  4.141143e+00
## [7893]  3.746886e+00  3.752627e+00  3.558365e+00  3.464099e+00
## [7897]  3.669831e+00  3.075559e+00  2.081284e+00  1.587006e+00
## [7901]  1.592724e+00  2.198440e+00  2.604152e+00  2.809862e+00
## [7905]  2.915568e+00  3.221270e+00  3.426970e+00  3.532667e+00
## [7909]  3.638360e+00  3.744050e+00  3.949737e+00  3.855421e+00
## [7913]  3.461102e+00  3.166779e+00  2.672454e+00  3.178125e+00
## [7917]  3.583793e+00  3.489457e+00  2.795119e+00  1.500777e+00
## [7921]  1.506433e+00  9.120847e-01  2.017734e+00  2.623379e+00
## [7925]  2.529022e+00  2.734661e+00  3.140297e+00  3.645930e+00
## [7929]  3.351560e+00  3.457186e+00  3.962809e+00  4.568429e+00
## [7933]  4.574046e+00  4.779660e+00  4.785270e+00  4.890878e+00
## [7937]  4.996482e+00  4.202083e+00  4.507680e+00  4.613275e+00
## [7941]  4.918866e+00  5.224454e+00  5.530039e+00  4.935620e+00
## [7945]  4.341199e+00  3.746774e+00  3.252346e+00  3.057914e+00
## [7949]  2.563480e+00  2.469042e+00  2.874601e+00  6.801567e-01
## [7953]  1.485709e+00  2.391259e+00  3.096805e+00  4.202347e+00
## [7957]  5.107887e+00  5.613423e+00  5.318957e+00  4.224487e+00
## [7961]  2.130013e+00  1.035537e+00 -5.894324e-02  1.346574e+00
## [7965]  1.452087e+00  1.457598e+00  2.063105e+00  2.468609e+00
## [7969]  2.774110e+00  3.379607e+00  3.685101e+00  4.590592e+00
## [7973]  5.196080e+00  5.701564e+00  5.807046e+00  5.712524e+00
## [7977]  5.817998e+00  6.123470e+00  6.228938e+00  5.734403e+00
## [7981]  5.139865e+00  4.845323e+00  4.850779e+00  4.856231e+00
## [7985]  4.461679e+00  3.767125e+00  4.072567e+00  4.078006e+00
## [7989]  3.183442e+00  2.788875e+00  2.594304e+00  2.299730e+00
## [7993]  1.405153e+00  1.110573e+00  7.159889e-01  3.214021e-01
## [7997]  2.681204e-02 -6.677813e-01 -8.623778e-01 -6.569775e-01
## [8001]  3.484195e-01  1.453813e+00  2.759204e+00  3.264591e+00
## [8005]  4.469975e+00  5.375356e+00  5.580734e+00  4.386108e+00
## [8009]  2.791479e+00  2.096847e+00  1.302212e+00 -9.242630e-02
## [8013]  3.129320e-01 -8.817129e-01 -1.376361e+00 -1.671012e+00
## [8017] -2.265667e+00 -1.360325e+00 -9.549856e-01 -1.496498e-01
## [8021]  2.556828e-01 -1.389878e-01 -2.336617e-01 -5.283387e-01
## [8025] -4.230190e-01  1.822976e-01  6.876109e-01  9.929210e-01
## [8029]  1.098228e+00  1.203532e+00  1.308832e+00  1.014129e+00
## [8033]  1.019423e+00  1.224714e+00  1.330002e+00  1.135287e+00
## [8037] -8.594322e-01 -1.554154e+00 -2.148879e+00 -2.443608e+00
## [8041] -2.538339e+00 -2.933074e+00 -2.327812e+00 -2.422553e+00
## [8045] -2.517297e+00 -2.712045e+00 -2.806795e+00 -3.201549e+00
## [8049] -3.896306e+00 -2.691067e+00 -2.085830e+00 -4.805967e-01
## [8053] -7.536651e-02  5.298605e-01 -3.649157e-01 -9.596951e-01
## [8057] -7.544777e-01 -6.492635e-01 -7.440525e-01 -6.388446e-01
## [8061] -4.336399e-01 -7.284384e-01 -9.232401e-01 -6.180450e-01
## [8065] -1.212853e+00 -2.076643e-01  1.975213e-01  1.102704e+00
## [8069]  1.207883e+00  1.213059e+00  8.182320e-01  2.340169e-02
## [8073] -8.714318e-01 -1.666268e+00 -1.561108e+00 -1.155951e+00
## [8077] -6.507973e-01 -3.456466e-01  1.595009e-01 -3.535475e-02
## [8081] -8.302136e-01 -1.525076e+00 -2.319941e+00 -2.614809e+00
```

```
## [8085] -2.709680e+00 -3.304555e+00 -3.499433e+00 -3.794314e+00
## [8089] -3.689198e+00 -3.784085e+00 -4.078976e+00 -3.873869e+00
## [8093] -3.568766e+00 -3.263666e+00 -3.058569e+00 -2.953475e+00
## [8097] -3.048385e+00 -2.943297e+00 -2.438213e+00 -2.333132e+00
## [8101] -2.028054e+00 -1.222979e+00 -1.517907e+00 -2.012839e+00
## [8105] -2.707773e+00 -3.902711e+00 -3.497652e+00 -5.892596e+00
## [8109] -5.387543e+00 -5.682493e+00 -5.977447e+00 -6.372404e+00
## [8113] -6.967363e+00 -6.362326e+00 -5.257292e+00 -5.352261e+00
## [8117] -5.547234e+00 -5.742209e+00 -5.337188e+00 -6.132170e+00
## [8121] -5.727154e+00 -5.222142e+00 -4.317134e+00 -3.012128e+00
## [8125] -2.107125e+00 -1.502126e+00 -1.297130e+00 -2.092136e+00
## [8129] -2.987146e+00 -3.382159e+00 -3.577176e+00 -4.172195e+00
## [8133] -3.667217e+00 -3.662243e+00 -3.457272e+00 -3.652303e+00
## [8137] -5.447338e+00 -5.942376e+00 -5.937418e+00 -6.532462e+00
## [8141] -6.227509e+00 -7.022560e+00 -8.017614e+00 -8.312670e+00
## [8145] -8.407730e+00 -8.802793e+00 -5.497859e+00 -3.692929e+00
## [8149] -2.488001e+00 -1.883077e+00 -1.878155e+00 -2.673237e+00
## [8153] -3.568322e+00 -5.163410e+00 -5.558501e+00 -6.053595e+00
## [8157] -6.748692e+00 -4.643793e+00 -3.738896e+00 -2.534003e+00
## [8161] -1.729112e+00 -3.242251e-01  5.806590e-01  1.085540e+00
## [8165]  6.904179e-01  1.952927e-01  4.001644e-01  1.005033e+00
## [8169]  1.209898e+00  1.314761e+00  2.319620e+00  3.124476e+00
## [8173]  4.029329e+00  3.434179e+00  3.939026e+00  3.243870e+00
## [8177]  2.048711e+00  1.053549e+00  1.658383e+00  3.063215e+00
## [8181]  2.568043e+00  2.072868e+00  1.677690e+00  1.582510e+00
## [8185]  1.873255e-01  1.092138e+00  1.596948e+00  8.017550e-01
## [8189]  2.065587e-01 -2.886407e-01 -6.838432e-01 -7.790488e-01
## [8193]  2.257426e-01  1.230531e+00  2.235316e+00  3.240098e+00
## [8197]  4.044877e+00  4.649653e+00  4.754426e+00  3.959196e+00
## [8201]  2.563963e+00  3.268726e+00  3.873487e+00  3.678244e+00
## [8205]  3.182999e+00  2.987750e+00  2.492498e+00  1.397244e+00
## [8209]  1.301986e+00  1.706725e+00  1.911461e+00  2.316194e+00
## [8213]  1.720924e+00  1.025651e+00  7.303743e-01  3.350950e-01
## [8217]  5.398127e-01  1.044527e+00  2.649239e+00  3.353947e+00
## [8221]  4.258653e+00  4.363355e+00  4.568054e+00  4.372750e+00
## [8225]  4.277444e+00  3.782134e+00  2.686821e+00  1.491505e+00
## [8229]  1.996186e+00  1.900864e+00  8.055386e-01  6.102104e-01
## [8233] -2.851209e-01 -8.804552e-01 -5.757925e-01 -1.071133e+00
## [8237] -1.766476e+00 -1.361823e+00 -6.571724e-01 -9.525249e-01
## [8241] -8.478806e-01 -5.432392e-01 -3.860092e-02  5.660343e-01
## [8245]  1.470667e+00  2.375296e+00  2.279922e+00  1.484545e+00
## [8249]  5.891650e-01 -3.062179e-01 -8.016039e-01 -1.096993e+00
## [8253] -1.492385e+00 -1.887780e+00 -1.883178e+00 -2.578580e+00
## [8257] -2.873984e+00 -3.269391e+00 -3.264801e+00 -3.460215e+00
## [8261] -4.855631e+00 -5.951050e+00 -6.546473e+00 -6.641898e+00
## [8265] -7.237326e+00 -6.532758e+00 -5.028192e+00 -2.123630e+00
## [8269]  1.809297e-01  9.854861e-01  1.900395e-01 -6.054100e-01
## [8273] -8.008626e-01 -5.963183e-01 -6.917769e-01 -6.872385e-01
## [8277] -9.827032e-01 -1.278171e+00 -1.673642e+00 -1.369115e+00
## [8281] -2.064592e+00 -2.460072e+00 -2.755554e+00 -2.451040e+00
## [8285] -2.546529e+00 -2.742021e+00 -2.537516e+00 -3.533013e+00
## [8289] -3.628514e+00 -3.624018e+00 -2.919525e+00 -1.515035e+00
## [8293] -6.105474e-01 -6.063198e-03  2.984180e-01 -6.971038e-01
## [8297] -1.992629e+00 -2.688156e+00 -3.383687e+00 -4.179221e+00
```

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## [8301] -4.474758e+00 -6.570298e+00 -5.565841e+00 -5.261386e+00
## [8305] -5.056935e+00 -4.852487e+00 -4.448042e+00 -4.343599e+00
## [8309] -4.239160e+00 -3.834724e+00 -3.430291e+00 -3.425860e+00
## [8313] -2.721433e+00 -1.817009e+00 -1.012588e+00 -6.081692e-01
## [8317] -9.037539e-01 -1.099342e+00 -9.949321e-01 -1.290526e+00
## [8321] -1.986122e+00 -2.781722e+00 -3.077324e+00 -2.872930e+00
## [8325] -2.368538e+00 -2.364150e+00 -2.559764e+00 -3.455382e+00
## [8329] -2.751002e+00 -2.446626e+00 -3.542252e+00 -4.737881e+00
## [8333] -5.033514e+00 -4.129149e+00 -4.224787e+00 -4.320428e+00
## [8337] -4.516073e+00 -4.511720e+00 -3.807370e+00 -2.803023e+00
## [8341] -2.298679e+00 -1.594338e+00 -1.090000e+00 -8.856651e-01
## [8345] -1.181333e+00 -7.770039e-01 -1.726777e-01 -5.683545e-01
## [8349]  1.359657e-01 -5.971698e-02  4.459735e-02 -6.510913e-01
## [8353] -1.467829e-01 -2.424774e-01 -6.381749e-01 -2.338754e-01
## [8357] -5.295788e-01 -8.252852e-01 -9.209945e-01 -8.167068e-01
## [8361] -7.124220e-01 -7.081402e-01 -3.861278e-03  4.146541e-04
## [8365]  4.687639e-03  1.089577e-01  4.132248e-01 -5.825111e-01
## [8369] -2.478250e+00 -3.173992e+00 -3.969736e+00 -5.065484e+00
## [8373] -5.361235e+00 -5.556988e+00 -4.952744e+00 -5.948504e+00
## [8377] -6.244266e+00 -6.440031e+00 -6.535800e+00 -6.231571e+00
## [8381] -5.027345e+00 -5.723122e+00 -5.518902e+00 -5.714685e+00
## [8385] -5.510470e+00 -4.606259e+00 -4.302051e+00 -3.797845e+00
## [8389] -3.093643e+00 -2.789443e+00 -2.285247e+00 -2.181053e+00
## [8393] -1.976862e+00 -2.072675e+00 -2.368490e+00 -2.264308e+00
## [8397] -2.260129e+00 -2.055952e+00 -2.351779e+00 -2.247609e+00
## [8401] -2.543441e+00 -2.039277e+00 -1.835115e+00 -1.430957e+00
## [8405] -1.526801e+00 -1.122648e+00 -1.218498e+00 -1.314351e+00
## [8409] -9.102074e-01 -1.006066e+00 -6.019280e-01 -3.977927e-01
## [8413]  1.063397e-01  4.104692e-01 -8.540420e-02  3.187195e-01
## [8417]  3.228403e-01 -1.730419e-01  1.310731e-01  1.351852e-01
## [8421]  5.392943e-01  8.434006e-01  4.475039e-01  7.516044e-01
## [8425]  6.557019e-01  5.597965e-01  1.163888e+00  1.067977e+00
## [8429]  1.172063e+00  1.076146e+00  1.180226e+00  8.843036e-01
## [8433]  5.883779e-01  7.924494e-01 -2.034820e-01 -8.994163e-01
## [8437] -9.953536e-01 -1.391294e+00 -1.187237e+00 -1.283183e+00
## [8441] -1.179131e+00 -1.175083e+00 -1.071037e+00 -1.066995e+00
## [8445] -7.629552e-01 -6.589184e-01 -3.548845e-01 -3.508535e-01
## [8449] -2.468253e-01 -1.428001e-01 -3.877768e-02 -1.347582e-01
## [8453] -3.074155e-02 -1.267278e-01 -1.227169e-01 -1.187089e-01
## [8457] -4.147038e-01 -4.107016e-01 -3.067022e-01  2.972943e-01
## [8461]  4.012879e-01  1.005279e+00  1.209267e+00  1.313252e+00
## [8465]  9.172337e-01  8.212129e-01  1.125189e+00  1.129163e+00
## [8469]  8.331335e-01  1.037101e+00  1.041066e+00  1.145028e+00
## [8473]  1.248988e+00  1.452944e+00  1.256897e+00  6.608479e-01
## [8477]  6.647957e-01 -6.312594e-01 -6.273174e-01  7.662177e-02
## [8481]  1.805581e-01  3.844915e-01  8.884221e-01  1.092350e+00
## [8485]  1.296275e+00  1.300197e+00  1.504116e+00  1.208032e+00
## [8489]  1.311946e+00  1.315856e+00  1.619764e+00  1.723669e+00
## [8493]  1.927571e+00  2.031470e+00  2.135367e+00  2.239260e+00
## [8497]  2.543151e+00  2.747039e+00  2.750924e+00  2.754806e+00
## [8501]  2.758685e+00  2.762562e+00  2.966436e+00  3.070306e+00
## [8505]  3.274174e+00  3.678039e+00  4.081902e+00  4.285761e+00
## [8509]  4.589618e+00  4.993472e+00  4.997323e+00  4.901171e+00
## [8513]  4.905016e+00  4.708858e+00  4.512698e+00  4.516535e+00
```

```
## [8517]  4.120369e+00  4.124200e+00  4.228028e+00  4.231854e+00
## [8521]  4.235676e+00  4.039496e+00  4.143313e+00  4.147127e+00
## [8525]  4.050938e+00  3.954747e+00  3.958553e+00  3.862356e+00
## [8529]  3.866156e+00  4.069953e+00  3.373747e+00  2.877539e+00
## [8533]  2.481328e+00  2.685114e+00  2.288897e+00  2.092677e+00
## [8537]  1.796455e+00  1.700229e+00  1.504001e+00  2.007770e+00
## [8541]  1.211536e+00  1.115300e+00  9.190605e-01 -4.771816e-01
## [8545] -1.373427e+00 -1.469674e+00 -2.765925e+00 -2.762178e+00
## [8549] -3.358435e+00 -1.854694e+00 -9.509554e-01 -5.472200e-01
## [8553]  7.565126e-01  1.360242e+00  2.263969e+00  3.167694e+00
## [8557]  4.271415e+00  5.375133e+00  5.678849e+00  5.482562e+00
## [8561]  5.586272e+00  5.289980e+00  4.693685e+00  3.897386e+00
## [8565]  3.401085e+00  3.704782e+00  3.708475e+00  3.512166e+00
## [8569]  3.415854e+00  3.419539e+00  3.523221e+00  3.526901e+00
## [8573]  3.630577e+00  3.434252e+00  3.337923e+00  3.141591e+00
## [8577]  3.345257e+00  3.748920e+00  4.552580e+00  5.356237e+00
## [8581]  6.059892e+00  6.063544e+00  5.667193e+00  5.070840e+00
## [8585]  3.974483e+00  2.078124e+00  2.681762e+00  2.285398e+00
## [8589]  2.589030e+00  2.592660e+00  1.996287e+00  1.599912e+00
## [8593]  1.903533e+00  2.707152e+00  2.810768e+00  3.314382e+00
## [8597]  2.917992e+00  2.821600e+00  2.525206e+00  2.828808e+00
## [8601]  2.732408e+00  2.736005e+00  2.739599e+00  3.643191e+00
## [8605]  4.646780e+00  4.750366e+00  4.753949e+00  4.257530e+00
## [8609]  3.561108e+00  3.464683e+00  3.668256e+00  2.671826e+00
## [8613]  1.975393e+00  1.878957e+00  2.382519e+00  1.786078e+00
## [8617]  1.789635e+00  1.393188e+00  1.196739e+00  1.100287e+00
## [8621]  9.038331e-01  6.073759e-01  6.109161e-01 -2.855464e-01
## [8625] -7.820116e-01 -8.784795e-01  2.250499e-01  1.328577e+00
## [8629]  2.332101e+00  3.235622e+00  2.839141e+00  2.142657e+00
## [8633]  9.461702e-01  8.496809e-01  9.531889e-01  8.566942e-01
## [8637]  1.060197e+00  1.563697e+00  9.671943e-01  7.068896e-02
## [8641]  1.741810e-01  7.767036e-02  2.811571e-01  4.846412e-01
## [8645]  7.881226e-01  5.916014e-01  4.950775e-01  1.098551e+00
## [8649]  1.102022e+00  1.105490e+00  2.108956e+00  2.912419e+00
## [8653]  3.115879e+00  2.719337e+00  2.622792e+00  2.526244e+00
## [8657]  2.029694e+00  1.833142e+00  1.036586e+00  7.400283e-01
## [8661]  7.434678e-01  7.469046e-01  5.503389e-01  5.537705e-01
## [8665]  1.057200e+00  9.606261e-01  5.640500e-01  6.674713e-01
## [8669]  5.708901e-01  4.743062e-01  7.777198e-01  6.811309e-01
## [8673]  5.845393e-01  1.879452e-01  7.913485e-01  1.794749e+00
## [8677]  1.498147e+00  1.901543e+00  2.104936e+00  2.108327e+00
## [8681]  2.011715e+00  2.015100e+00  1.518483e+00  1.421863e+00
## [8685]  1.425241e+00  1.328617e+00  1.331989e+00  1.135360e+00
## [8689]  9.387273e-01  9.420925e-01  1.345455e+00  6.488153e-01
## [8693]  6.521729e-01  4.555281e-01  4.588807e-01  3.622308e-01
## [8697] -1.344216e-01 -9.310765e-01 -1.277339e-01  4.756062e-01
## [8701]  1.378944e+00  9.822790e-01  5.856116e-01  1.889418e-01
## [8705] -3.077305e-01 -8.044053e-01 -1.801083e+00 -2.097762e+00
## [8709] -2.494445e+00 -2.591129e+00 -2.687816e+00 -5.284506e+00
## [8713] -6.181198e+00 -4.677893e+00 -5.574590e+00 -7.071289e+00
## [8717] -6.367991e+00 -6.964695e+00 -7.661402e+00 -7.458111e+00
## [8721] -6.354823e+00 -5.551537e+00 -4.248253e+00 -2.844972e+00
## [8725] -1.741694e+00 -7.384176e-01 -1.351438e-01 -6.318725e-01
## [8729] -2.328604e+00 -3.525337e+00 -4.122073e+00 -5.518811e+00
```

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```
## [8733] -4.215552e+00 -3.312295e+00 -4.209040e+00 -3.205788e+00
## [8737] -3.102539e+00 -2.799291e+00 -1.996046e+00 -1.692804e+00
## [8741] -6.895635e-01 -6.863257e-01 -5.830903e-01 -3.798573e-01
## [8745] -5.766266e-01 -4.733983e-01 -2.701723e-01 -6.694876e-02
## [8749]  1.362725e-01  6.394913e-01  1.242708e+00  1.845922e+00
## [8753]  2.349134e+00  2.852343e+00  3.055550e+00  3.458755e+00
## [8757]  3.461958e+00  3.465158e+00  3.468356e+00  3.771551e+00
```

Our hypothesis is that most of the weather file is useless for overheating. The question is, which bits are useful and which bits are useless?

CIBSE TM 52 overheating criteria

We've been using the CIBSE TM 52 overheating criteria to calculate overheating. You all probably know those calculations better than me - they're based on ΔT, which is the difference between the operational temperature T_{op} and T_{max}:

$$\Delta T = T_{op} - T_{max}$$

And:

$$T_{max} = 0.33T_{rm} + 21.8$$

Where T_{rm} is the running mean.

The CIBSE criteria are:

- A. Number of hours where ΔT is greater than 1 should be less than 3% of occupied hours
- B. The maximum weighed exceedance should be less than 6 on *any* day.
- C. ΔT should never be greater than 4.

Both A and C are obviously based on ΔT, but so is B. It therefore seems illogical to include areas of the weather file where ΔT is likely to be less than 0.

To test this, we designed a little experiment.

We ran a *full* year of weather through a random building to calculated CIBSE A, B and C. We also calculated ΔT on every timestep.

We then took the *full* weather year and took out the IMF 'noise' when ΔT was less than 0. We also left a 3-day run up and run down either side. This *decomposed* weather was then ran through the building.

We found that the results for the CIBSE criteria were almost identical:

```
files.loc = 'exp/exp2/'

results.f.names = dir(files.loc, pattern = '*.RDS')

results.all = list()
no.files = length(results.f.names)
partial = full = matrix(NA, nrow=no.files, ncol=3)
colnames(partial) = colnames(full) = c('CIBSE A','CIBSE B','CIBSE C')
rownames(partial) = rownames(full) = results.f.names

sample.result = readRDS(file = paste(files.loc,results.f.names[2], sep=''))
kable(sample.result$Comparison, digits=2)
```

|	CIBSE.A	CIBSE.B	CIBSE.C
Full weather	0.03	43	7
Partial weather	0.03	41	7

As you'd expect the results vary for different files and different building types. We tested different building types with different weather files and compared the results. The dot plot below shows the differences between the full and partial weather files for each location, and for each of the three *new* DSYs:

```r
for (i in 1:no.files){
  results.all = readRDS(file = paste(files.loc,results.f.names[i], sep=''))
  # for each result calculate the percentage difference between the true value and the decomposed value
  full[i,] = c(results.all$Comparison[1,])
  partial[i,] = c(results.all$Comparison[2,])
}

# process the files
Place = gsub('(_DSY)([123])(.RDS)', '', rownames(full))
WeatherFile = rownames(full)
`DSY Type` = gsub("^.*DSY","", WeatherFile)
`DSY Type` = gsub(".RDS","", `DSY Type`)
partial.df = cbind(as.data.frame(partial), Place, WeatherFile, 'Partial', `DSY Type`)
full.df = cbind(as.data.frame(full), Place, WeatherFile, 'Full', `DSY Type`)
colnames(partial.df)[6] = colnames(full.df)[6] = 'Type of file'

all.results = rbind(partial.df, full.df)
all.results$`CIBSE A` = all.results$`CIBSE A`*100 # make CIBSE A a percentage rather than a ratio


ggplot(data = all.results, aes(x = `CIBSE A`, y = Place,  color=`Type of file`, shape=`DSY Type`)) +
  geom_line(data=all.results, aes(x=`CIBSE A`, y = Place, group=WeatherFile)) +
  geom_point() +
  labs(x = "CIBSE A: % of occupied hours \n where deltaT > 1") +
  labs(y = "Design summer year location") +
  theme_linedraw()
```
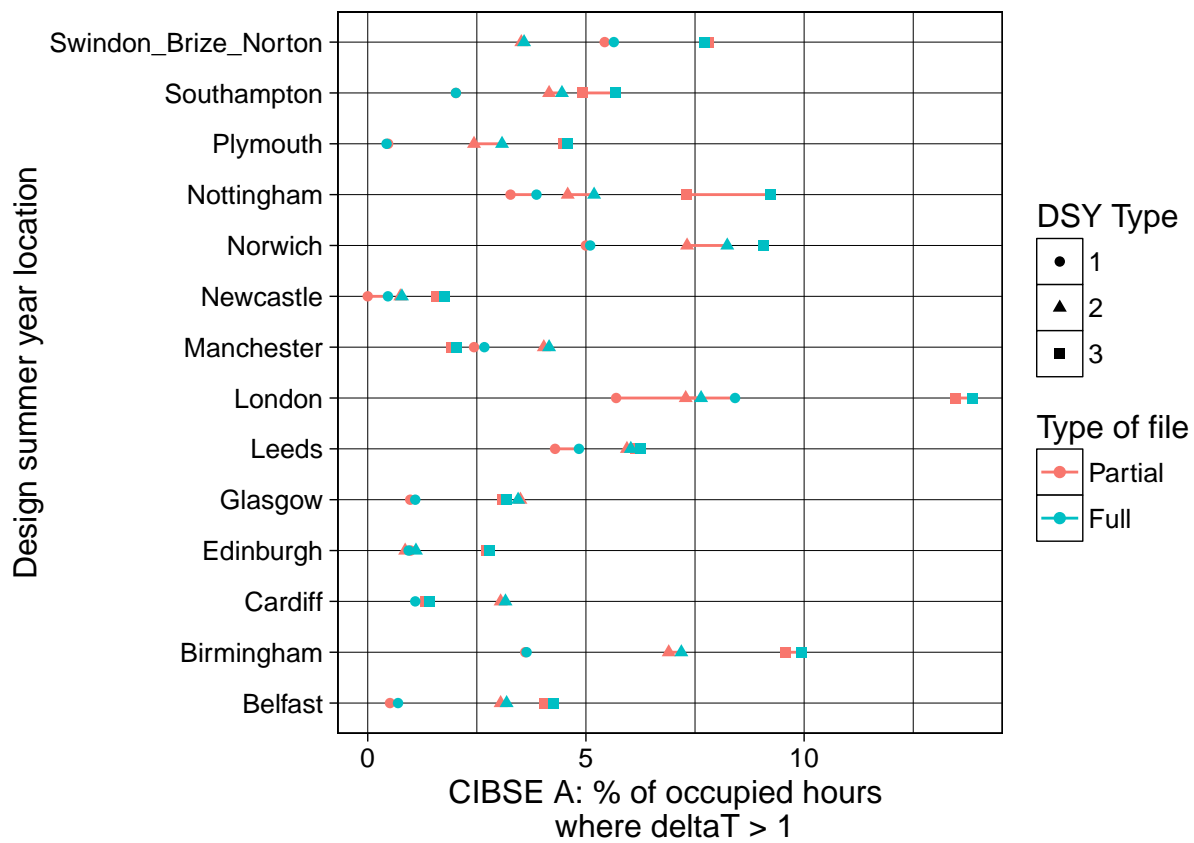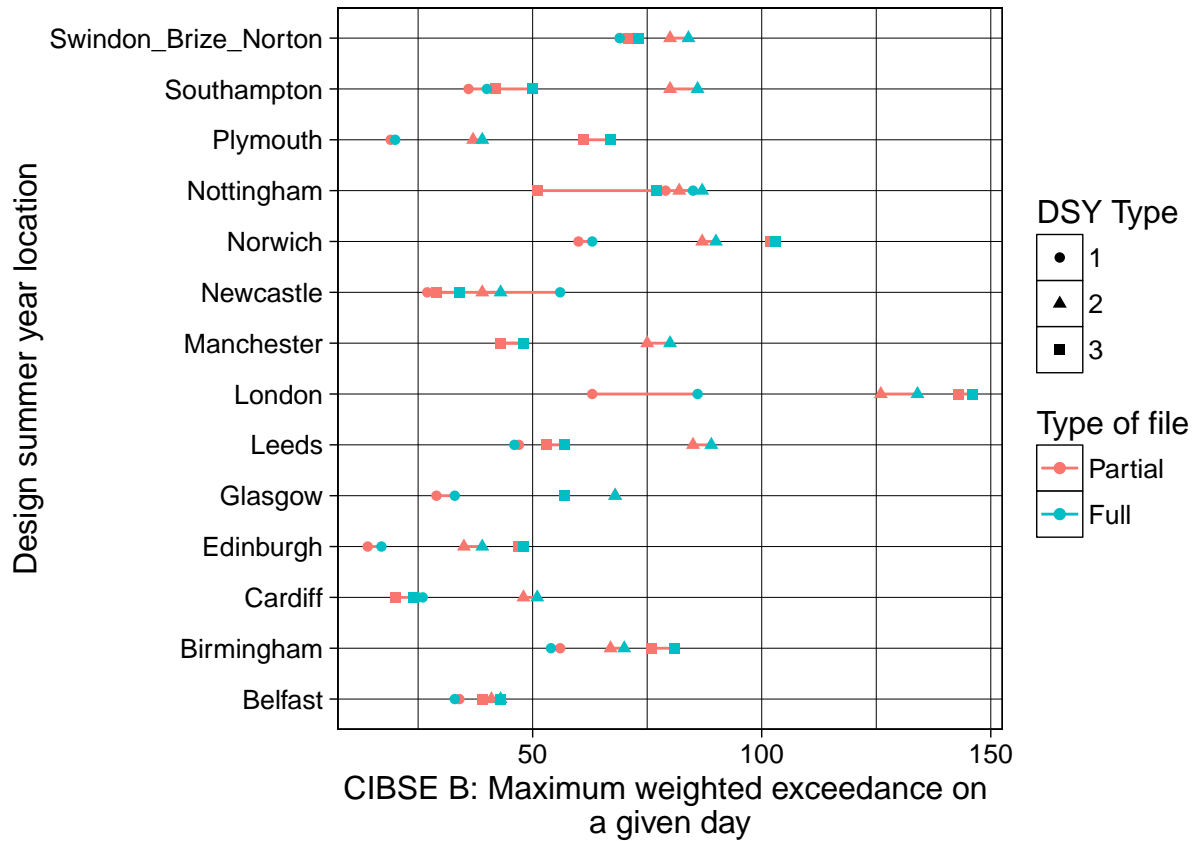
```
ggplot(data = all.results, aes(x = `CIBSE B`, y = Place,  color=`Type of file`, shape=`DSY Type`)) +
  geom_line(data=all.results, aes(x=`CIBSE B`, y = Place, group=WeatherFile)) +
  geom_point() +
  labs(x = "CIBSE B: Maximum weighted exceedance on \na given day") +
  labs(y = "Design summer year location") +
  theme_linedraw()
```

```
ggplot(data = all.results, aes(x = `CIBSE C`, y = Place,  color=`Type of file`, shape=`DSY Type`)) +
  geom_line(data=all.results, aes(x=`CIBSE C`, y = Place, group=WeatherFile)) +
  geom_point() +
  labs(x = "CIBSE C: Maximum value of deltaT") +
  labs(y = "Design summer year location") +
  theme_linedraw()
```
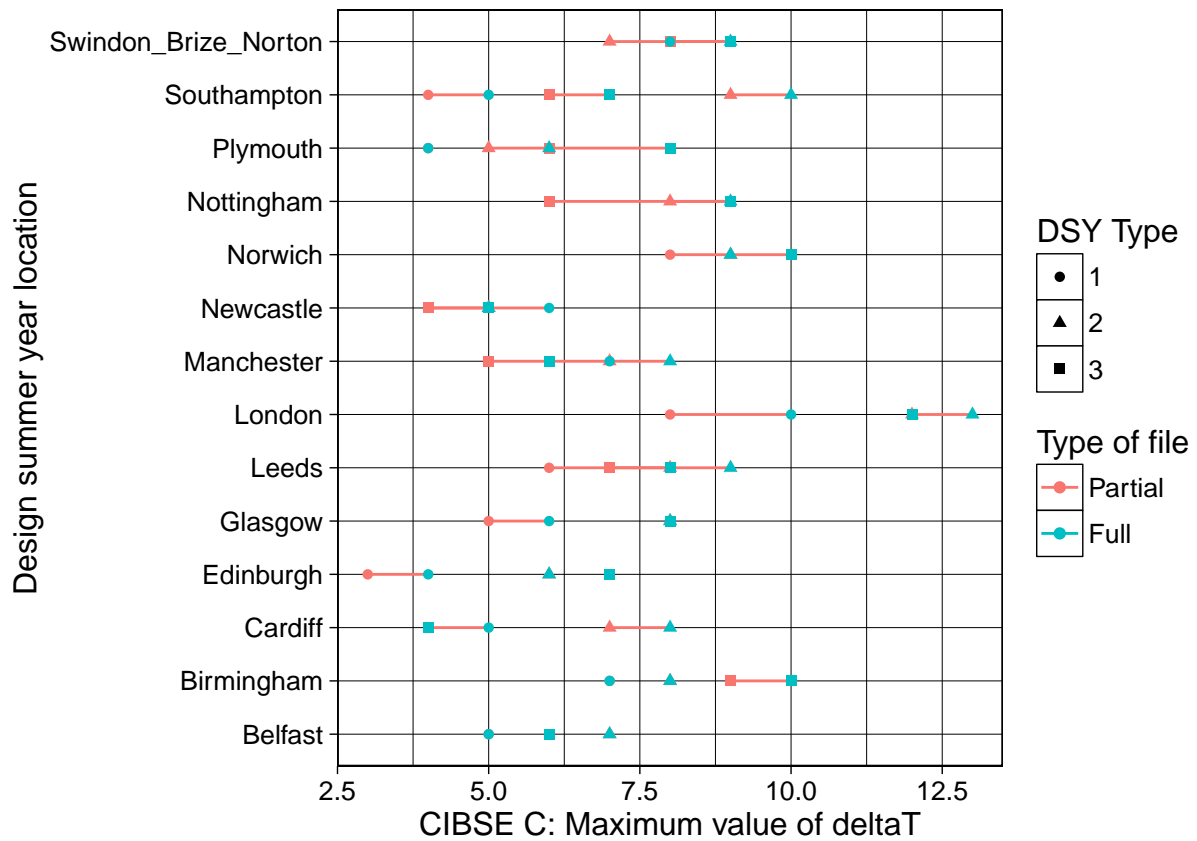
We need to do more work to validate the results and we need to find out why some weather / building combinations are resulting in bigger differences than others.

To be continued!