

PBSR Assignment 1

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2023-10-12

All the questions of the assignment are done here, and in no separate notebook.

Q1 (i)

X is a continuous random variable whose p.d.f is given by

$$f(x) = ax^{a-1} \quad \text{for } 0 \leq x \leq c$$

The distribution function of X is given by

$$F(x) = P(X \leq x) = \int_0^x f(t)dt = \left(\frac{x}{c}\right)^a \quad \text{for } 0 \leq x \leq c$$

Q1 (ii)

In order to find the inverted CDF, we equate the CDF to some probability, p and solve for x.

$$\begin{aligned} \left(\frac{x}{c}\right)^a &= p \quad \text{for } 0 \leq x \leq c \\ x &= c.p^{\frac{1}{a}} \end{aligned}$$

which is the required inverted CDF

Q1 (iii)

```
# Code for Question 1 part 3
func1<-function(a,c) {
  set.seed(1)
  u<-runif(1)
  icdf<-c*u^(1/a)
  return(icdf)
}
```

```
# Code for Question 1 part 3
func1<-function(a,c) {
  set.seed(1)
  u<-runif(1)
  icdf<-c*u^(1/a)
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```

```
# Code for Question 1 part 3
func1<-function(a,c) {
  set.seed(1)
  u<-runif(1)
  icdf<-c*u^(1/a)
  return(icdf)
}
```

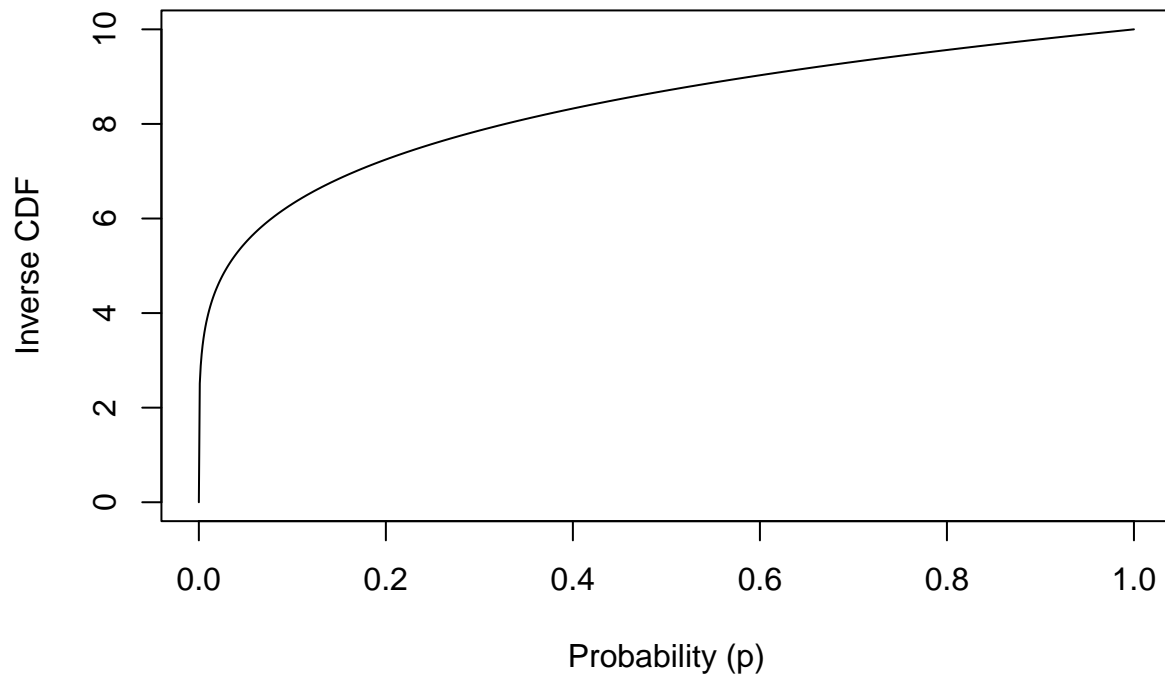
Q1 (iv)

```
# Code for Question 1 part 4
a <- 5
c <- 10
```

```
inv_cdf <- function(p) {
  c * p^(1/a)
}
```

```
curve(inv_cdf, from = 0, to = 1, n = 1000, xlab = "Probability (p)", ylab = "Inverse CDF", main = "Inverse CDF")
```

Inverse CDF Plot



```
p_val <- seq(0, 1, by = 0.01)
x_val <- inv_cdf(p_val)
min_x <- x_val[which.min(p_val)]

cat("Range of x values with the least probability:", min_x, "\n")
```

```
## Range of x values with the least probability: 0
```

Q1 (v)

```
# Code for Question 1 part 5
inv_cdf<-function(a,c) {
  sample_size=1000
  set.seed(1)
  u<-runif(sample_size)
  icdf<-c*u^(1/a)
  return(icdf)
}
a=5
c=10
inv_cdf(a,c)
```

```
## [1] 7.670360 8.206113 8.945584 9.809278 7.259946 9.787977 9.886817 9.204786
```

[9] 9.114773 5.730314 7.290591 7.069307 9.276715 8.258282 9.490307 8.697479
 ## [17] 9.357907 9.983760 8.240712 9.508981 9.865860 7.333741 9.179226 6.603389
 ## [25] 7.680226 8.266908 4.220445 8.250891 9.724628 8.060925 8.642191 9.027497
 ## [33] 8.682898 7.145031 9.628094 9.226053 9.549713 6.406774 9.373743 8.371945
 ## [41] 9.613089 9.166192 9.522367 8.882817 8.806619 9.537940 4.716148 8.624731
 ## [49] 9.395923 9.292081 8.626139 9.705586 8.478403 7.546774 5.886513 6.302822
 ## [57] 7.943503 8.769448 9.208147 8.353772 9.819341 7.826223 8.558053 8.022890
 ## [65] 9.176962 7.626576 8.629480 9.481586 6.096924 9.737187 8.054872 9.656016
 ## [73] 8.090710 8.029541 8.621552 9.774449 9.712631 8.283437 9.508676 9.919965
 ## [81] 8.465056 9.344558 8.325509 7.988601 9.458650 7.267205 9.340900 6.562244
 ## [89] 7.551031 6.780347 7.514637 5.676410 9.152632 9.739295 9.512572 9.557082
 ## [97] 8.543870 8.367093 9.589374 9.043603 9.187802 8.120887 7.697619 9.985325
 ## [105] 9.127428 7.341093 6.643062 8.627938 9.843315 9.025072 9.951881 9.394585
 ## [113] 8.137054 8.452611 6.826159 4.200543 9.352548 6.349254 8.509858 9.146390
 ## [121] 9.983624 8.690107 8.650312 7.044189 9.452981 8.538689 8.744058 7.301675
 ## [129] 7.444531 9.015862 8.951880 5.989227 5.130325 9.154077 9.852970 9.023056
 ## [137] 8.907938 8.794309 9.970011 8.731955 9.265251 9.033438 7.509860 7.627457
 ## [145] 9.388201 8.533699 7.057819 9.432548 6.371294 9.713092 9.072456 8.896023
 ## [153] 8.005351 8.535812 8.707041 7.103487 8.806323 5.961163 7.739852 7.337588
 ## [161] 7.778665 9.780786 8.509671 9.515185 9.748945 8.379462 5.767342 8.037764
 ## [169] 9.373782 8.047934 9.118537 9.658716 9.694114 8.289248 8.242701 9.781553
 ## [177] 9.158403 9.418307 9.044710 9.798180 7.826899 7.183314 9.761823 8.717103
 ## [185] 9.741047 7.167724 9.461187 9.375783 9.884827 8.865436 9.342535 8.278825
 ## [193] 6.320553 9.850182 7.770136 9.000253 6.435211 9.658469 7.951984 9.522168
 ## [201] 7.681878 7.378159 8.763225 7.690145 7.105857 8.769251 8.913909 6.640847
 ## [209] 7.616801 9.358733 9.921600 6.311350 9.473932 9.893697 9.607669 7.903010
 ## [217] 9.173318 9.904920 9.905704 8.059173 7.652746 6.978072 7.972903 8.740481
 ## [225] 9.843089 8.743339 7.624236 5.412744 8.398571 9.689285 8.093262 6.664185
 ## [233] 8.216509 9.121446 8.283817 9.283740 9.283162 8.888798 8.445353 8.534262
 ## [241] 7.893507 8.962698 9.813945 6.773707 8.387250 7.325309 8.441914 6.676789
 ## [249] 8.561893 9.883218 9.470829 9.862067 8.600919 9.039577 8.652597 6.416982
 ## [257] 7.564751 8.700327 8.209387 9.865830 8.787472 7.947883 7.741023 9.533548
 ## [265] 9.318041 6.974472 5.779027 9.452692 9.089411 7.012506 5.738227 6.419610
 ## [273] 8.247991 7.010306 7.852957 7.190432 7.621563 7.106355 8.625033 9.492514
 ## [281] 4.883922 8.798595 9.748281 8.210253 5.447212 6.735508 7.969555 6.886078
 ## [289] 6.672135 7.396029 7.429642 6.663923 9.962852 7.996744 8.729537 9.261596
 ## [297] 6.299053 6.531881 5.502429 9.854325 9.240488 6.243307 8.679570 8.567302
 ## [305] 8.219708 9.982135 7.067657 9.595433 5.848849 8.327403 6.759782 7.198646
 ## [313] 9.660409 9.363886 7.680177 8.688030 6.080436 8.124044 9.937645 9.101988
 ## [321] 9.215406 7.924414 8.349083 9.992142 9.691736 9.905321 9.592766 9.520540
 ## [329] 7.684002 9.471271 9.972472 7.826234 8.322829 9.592356 5.990583 8.168605
 ## [337] 8.495732 6.902742 8.974603 9.939599 9.978911 7.068469 8.847504 8.259142
 ## [345] 9.247204 7.692106 8.595696 7.030799 8.193130 9.378128 8.656731 5.767233
 ## [353] 9.526288 8.400441 9.961745 7.768223 9.675359 6.067584 9.761840 8.605491
 ## [361] 6.420454 8.027149 9.651355 7.734796 8.989444 9.649778 5.894404 9.318880
 ## [369] 9.308370 8.576233 8.473886 8.911988 9.852690 7.456268 7.399420 8.408035
 ## [377] 8.028318 9.713682 7.074407 8.682115 8.445702 8.918595 9.191836 9.956735
 ## [385] 7.467202 7.522037 9.555948 9.638077 6.471502 9.925523 6.817954 6.783396
 ## [393] 9.845776 8.729868 6.886250 8.098251 9.202064 7.920772 8.113406 6.822786
 ## [401] 9.199431 7.136203 9.907044 9.786798 9.884769 9.373690 8.198306 9.517703
 ## [409] 4.068658 9.877660 9.987467 8.140148 9.434914 9.546511 9.327035 8.619647
 ## [417] 8.686811 7.901780 9.298192 9.617410 8.465282 8.756214 9.210944 6.779042
 ## [425] 8.080434 8.349387 6.112249 9.861352 9.653585 9.746318 9.867985 5.915895
 ## [433] 8.235172 8.833537 6.372052 9.567557 9.414652 5.539228 8.642511 9.835726

[441] 5.292600 7.828292 8.708465 9.057956 7.663068 8.419539 8.181442 9.882271
 ## [449] 6.584010 5.875707 9.927593 8.495416 8.197931 7.018013 5.581932 9.196498
 ## [457] 8.962102 9.974069 9.040189 5.787829 6.949627 8.618099 2.865754 8.491377
 ## [465] 7.643719 9.873676 9.353246 6.957978 8.620961 9.285432 8.564863 9.908639
 ## [473] 9.344625 8.313626 6.518843 7.517688 9.711037 8.470179 8.698069 9.289924
 ## [481] 9.466698 6.891137 9.678951 9.891298 8.993679 8.713329 7.172161 2.836711
 ## [489] 9.742202 6.691032 4.692051 9.875197 7.822730 6.968536 8.321793 8.559953
 ## [497] 8.462606 8.763947 9.671622 5.601852 8.886479 9.280095 9.197140 9.211866
 ## [505] 8.606597 9.938300 8.334658 9.679167 9.457545 8.816180 9.734579 8.587857
 ## [513] 3.819457 9.384226 9.355222 7.154283 9.163377 8.847010 8.036965 9.140116
 ## [521] 9.632344 9.335255 8.099405 6.632301 8.275303 9.852041 9.574000 9.462669
 ## [529] 9.912999 9.987798 9.048107 4.938579 8.042349 7.739307 6.513039 5.334988
 ## [537] 8.198097 8.044418 7.045896 9.093402 8.316536 9.909737 9.183941 8.005187
 ## [545] 7.226998 6.492287 9.991918 8.237421 8.911389 9.396960 9.727119 8.943449
 ## [553] 4.060345 9.805187 9.492309 8.251394 6.232581 5.485170 9.613595 9.632630
 ## [561] 9.187827 6.678175 8.067834 9.393504 9.807298 9.301359 7.526827 9.157810
 ## [569] 7.756468 9.913800 6.917494 8.400510 7.590729 6.237139 9.628895 8.791893
 ## [577] 9.224067 8.359709 9.663251 9.408697 8.097889 9.895724 9.165112 5.122715
 ## [585] 9.018090 8.388342 5.986623 8.801057 9.923505 9.334636 8.884228 7.535390
 ## [593] 9.510441 9.179978 9.634769 9.170411 8.634129 8.688250 8.240007 8.525820
 ## [601] 9.597359 9.853314 6.819417 9.440426 9.950834 9.949069 8.109026 8.300190
 ## [609] 9.899919 6.391324 9.865976 8.088275 8.817700 8.836588 9.350330 8.349498
 ## [617] 6.867805 8.060375 9.107636 5.646002 9.683983 7.337214 8.838777 6.714577
 ## [625] 7.986208 9.091363 7.614510 9.131408 8.655031 9.873178 9.697214 8.200636
 ## [633] 7.933078 9.630794 8.530947 7.941526 6.281673 5.786949 9.283281 9.224904
 ## [641] 9.801357 7.868884 9.861853 7.262112 9.545234 7.418118 4.984110 9.707444
 ## [649] 9.271537 9.881368 9.246355 9.664467 8.160492 8.293508 8.929391 6.247175
 ## [657] 7.202174 8.992600 9.444659 9.719138 8.204666 9.560689 5.664416 9.098260
 ## [665] 8.136663 8.992176 9.821295 7.243749 8.192660 9.234159 9.486119 8.781635
 ## [673] 9.629726 8.797879 8.711608 8.407064 8.162313 6.580871 7.850374 7.733827
 ## [681] 9.491253 9.510780 6.784910 8.758912 9.020484 8.725758 8.266847 8.431443
 ## [689] 4.112250 9.833191 6.025700 8.731034 9.611274 9.023970 8.423733 8.902881
 ## [697] 9.537308 6.997043 9.940192 8.611218 9.855362 9.793527 9.443095 9.248310
 ## [705] 9.168891 5.928677 8.421368 8.810289 9.882689 9.343797 9.375761 8.598909
 ## [713] 6.546969 9.522768 8.478637 8.452541 4.873712 6.810895 8.417534 9.483630
 ## [721] 3.432724 9.039600 9.803589 9.329155 7.653114 9.682638 8.028726 8.962482
 ## [729] 8.457696 5.527415 9.389472 8.867131 9.443950 5.509643 9.350979 7.847912
 ## [737] 7.771478 9.633914 6.127709 5.321062 8.100290 8.848175 9.057100 7.703943
 ## [745] 7.285319 8.247627 8.607778 9.646975 6.559865 9.246230 8.693932 9.796348
 ## [753] 8.877117 6.634746 8.493494 7.191092 8.465995 7.421437 9.920953 8.518016
 ## [761] 9.508246 6.915955 9.718173 7.291801 7.080427 6.973318 8.921770 9.382715
 ## [769] 9.738516 9.333805 8.625574 9.611528 4.406416 9.992210 9.131463 8.440830
 ## [777] 4.905034 9.449251 7.309321 9.998911 9.807206 9.344428 9.392377 8.607522
 ## [785] 9.708517 6.977744 9.089464 7.819430 8.547123 5.393462 7.078134 5.656969
 ## [793] 9.886262 8.072236 8.767134 9.103536 7.499748 8.760942 9.579115 8.098077
 ## [801] 9.699895 5.098114 9.941309 9.428532 7.714605 9.249779 8.096601 9.891721
 ## [809] 8.052737 5.014735 8.122673 8.271227 8.138058 9.918624 8.256710 8.861194
 ## [817] 9.845975 9.827896 7.534003 9.356530 8.101243 8.886820 9.423116 9.610164
 ## [825] 9.724553 5.139661 7.387443 8.183270 7.889656 9.384390 9.310777 9.813278
 ## [833] 9.670151 9.511668 8.329040 8.957891 5.978229 9.731961 9.911001 8.724681
 ## [841] 9.843937 6.695040 7.509032 8.670269 8.613243 8.466359 5.233179 9.158446
 ## [849] 9.352551 8.113837 9.890752 9.423456 5.509963 9.960417 7.372598 5.149109
 ## [857] 7.642395 9.365191 7.565772 7.484839 4.618414 7.665222 9.289585 5.104924
 ## [865] 5.748741 8.315961 8.670502 9.120373 9.372948 5.984578 8.412952 9.946892

```
## [873] 9.596307 7.412411 8.669489 4.082480 7.630034 8.541333 9.418048 9.981250
## [881] 8.021973 9.887060 9.922515 9.789911 8.679992 9.527233 9.570971 9.251585
## [889] 8.971741 8.014537 2.653154 5.802936 6.121405 4.202606 8.039001 6.535850
## [897] 9.009447 5.180495 3.946378 6.945223 9.638604 9.482902 7.711922 7.159900
## [905] 7.425575 5.733724 5.694895 6.825646 5.924479 5.326757 8.782352 9.537639
## [913] 9.297499 5.816525 4.475591 8.494065 6.910546 9.361143 9.321963 9.759125
## [921] 7.988154 9.941073 9.969454 5.231465 9.777455 9.616489 9.375125 7.801095
## [929] 8.712281 8.440325 9.058749 9.847655 7.517732 7.706835 9.402815 9.444764
## [937] 9.857161 8.571673 9.704417 7.922113 7.305147 9.836388 5.551660 8.371460
## [945] 8.547871 8.390532 9.231255 9.458193 9.816705 9.610759 6.227323 7.080080
## [953] 9.152422 9.734876 9.005551 7.652501 9.755872 7.156290 8.666388 3.966675
## [961] 8.153896 8.494078 6.605219 9.100969 7.872730 7.514686 8.145716 9.776009
## [969] 9.981184 9.396198 9.985534 8.839849 8.461712 9.928327 6.827155 5.815074
## [977] 4.752780 9.065888 9.302459 9.566254 6.726759 6.929583 9.977567 8.319887
## [985] 7.157986 8.626531 8.854359 8.002333 9.999861 8.800166 6.687268 8.480117
## [993] 9.090536 7.268783 6.691615 9.507485 9.134496 7.764112 7.183310 7.670522
```

Q1 (vi)

```
# Code for Question 1 part 6
a=5
c=10
sample_size=1000
sample_data=c*runif(sample_size)^(1/a)
sample_mean= mean(sample_data)

#Theoretical Mean- calculated by hand: ac/(a+1)

tmean=a*c/(a+1)

cat("Sample Mean:", sample_mean, "\n")
```

```
## Sample Mean: 8.26102
```

```
cat("Theoretical Mean:", tmean, "\n")
```

```
## Theoretical Mean: 8.333333
```

```
approx_lim=0.1
if(abs(sample_mean-tmean)<approx_lim){
  cat("The sample mean is approximately equal to the theoretical mean within the specified approximation")
} else{
  cat("The sample mean is not approximately equal to the theoretical mean within the specified approximation")
}
```

```
## The sample mean is approximately equal to the theoretical mean within the specified approximation.
```

The CONCLUSION we can draw is that the mean value of the original distribution and of the samples drawn by the Inverse transform method is almost the same. Basically what we did here is that, we verified the method to be very efficient to draw random samples following some random distribution.

Q2 (i)

```
# Code for Question 2 part 1
mean <- 160
variance <- 160^2
sample_size <- 10000
lambda=mean

set.seed(123)

uniform_heights <- runif(sample_size, min = mean - sqrt(variance), max = mean + sqrt(variance))
poisson_heights <- rpois(sample_size, lambda)
normal_heights <- rnorm(sample_size, mean, sqrt(variance))

uniform_heights
```

```
##      [1]  92.02480644 252.25764334 130.87261498 282.56556928 300.94953097
##      [6]  14.57807980 168.99375618 285.57409421 176.45920463 146.11671530
##     [11] 306.18667051 145.06692998 216.82260334 183.24268863  32.93589845
##     [16] 287.94399053  78.74807499  13.45905073 104.93463017 305.44116773
##     [21] 284.65258114 221.69708997 204.96218041 318.16632852 209.82585572
##     [26] 226.72974981 174.10112791 190.12544654  92.53111593  47.07636714
##     [31] 308.16775441 288.73569444 221.02568910 254.54957366   7.87637904
##     [36] 152.89471075 242.70705201  69.25053947 101.81792244  74.12025131
##     [41]  45.69600716 132.65482746 132.39178441 118.03054430  48.78231928
##     [46]  44.41794030  74.57091182 149.10798408  85.11124492 274.50486891
##     [51]  14.66597334 141.50402375 255.65595061  39.00776319 179.50335480
##     [56]  66.09004468  40.81012808 241.05851658 286.41451493 119.82808828
##     [61] 212.83686228  30.34901150 122.87028410  87.80276626 260.68481244
##     [66] 143.52522925 259.22059298 259.96464305 254.18954276 140.74614003
##     [71] 241.43205076 201.35076210 227.25836843   0.19992746 152.10130371
##     [76]  70.43804325 121.54129207 196.08672105 112.57533096  35.56333579
##     [81]  77.95823127 213.77778798 133.64696950 252.22266689  32.91668616
##     [86] 139.16567728 315.18623360 285.77635661 283.67009945  56.01684809
##     [91]  41.82262130 208.99261601 109.92527112 210.16260095 102.51943760
##     [96]  60.06115817 250.33417642  29.95039575 149.36929330 163.68174717
##    [101] 191.99646696 106.50353290 156.35617077 305.43162480 154.52876709
##    [106] 284.91207108 292.62021981 194.79519434 131.42072849  47.07030110
##    [111] 299.29593705  96.39324799  19.43058290 303.27262081 230.59080750
##    [116]  45.53417459 175.77108994 305.30919634 187.35467300 129.44329016
##    [121] 207.32591338 102.34259747  98.47040348  70.32564200 118.23643707
##    [126] 314.95014511  49.34473626  29.13407996  45.41021049 220.80227248
##    [131] 198.16207469 285.24611749 215.35970964 235.86487614 166.76343225
##    [136] 211.14830390 262.97774725 251.61009654 313.54301356 140.61809160
```

##	[141]	99.74470466	131.03198484	3.34947579	58.83184768	269.67338204
##	[146]	73.97177026	76.51198581	24.54117291	78.63157697	234.28326577
##	[151]	271.18501283	159.20872547	124.13088955	78.86367813	35.55086762
##	[156]	124.79821928	183.01930048	69.40568410	142.32576065	69.75701399
##	[161]	160.73586024	113.24946299	207.99525082	119.90846612	113.74252185
##	[166]	170.78014255	236.90699533	70.75294010	132.07875796	85.01973979
##	[171]	201.59137711	58.82511705	276.36611566	238.90176132	213.85108791
##	[176]	197.76571944	119.11617927	169.54741947	279.89834972	186.16003193
##	[181]	268.72568473	99.98341277	226.65290311	84.80569795	190.18982209
##	[186]	154.01273616	84.81047407	180.66893913	292.22023137	288.59980464
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##	[216]	224.27298799	112.60436431	130.86207934	262.70442367	294.03435141
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##	[1251]	264.54081610	163.43074411	181.67237304	0.36986232	46.00899301
##	[1256]	277.10946657	26.41953938	78.26261826	314.09381039	184.82600942
##	[1261]	79.59243663	196.78526521	10.16234264	46.85553417	224.98335168
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##	[1271]	8.32342736	232.07294464	145.18604532	181.17836960	279.27393481
##	[1276]	177.46021748	236.04870632	199.40133184	99.52908985	125.50287507
##	[1281]	64.66798574	272.88972467	194.18564826	241.95136443	180.00537880
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##	[1296]	97.06405468	246.59105502	234.70353760	268.44991945	182.09562957
##	[1301]	8.40986826	155.56071304	173.65793049	267.73123741	233.17265220
##	[1306]	177.63641819	23.49260718	43.68073575	219.07478280	31.87901959
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##	[1316]	34.43482585	249.30203795	81.63381867	175.37386432	10.84848665
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##	[1421]	273.81654114	185.76911792	133.03124845	298.42329130	148.06362927
##	[1426]	31.79082558	148.94379623	314.90683444	296.08731709	139.32760432
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##	[1471]	224.05715555	20.98396838	234.57279786	126.69810891	147.67611034
##	[1476]	232.09579624	150.40084705	319.84767281	270.69945335	265.02633721
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##	[1771]	216.41372390	204.51208681	47.87344866	192.36012481	87.28039548
##	[1776]	146.51307873	71.12098984	81.57488540	209.18007270	151.03781156
##	[1781]	51.50817141	87.06570707	228.14594977	196.27316870	42.27902919
##	[1786]	22.40232103	309.20480415	117.84648895	216.78530708	270.70455372
##	[1791]	77.32812330	11.24831714	190.47687575	267.58116096	115.91974728
##	[1796]	106.30033068	206.31562583	306.75684378	190.78516111	163.28960575
##	[1801]	49.68452349	270.67232177	68.60173620	214.35943834	197.68206440
##	[1806]	15.99992864	303.80760819	186.41665012	275.50538786	165.90951979
##	[1811]	85.16079471	191.16085231	254.58434694	220.57153203	153.80212627
##	[1816]	149.09740441	197.89194725	143.76656458	192.86641046	1.47487171
##	[1821]	318.39824401	130.06798349	37.74452388	278.25251050	172.86174610
##	[1826]	282.11125374	12.01274849	282.05886789	231.15189433	246.33929491
##	[1831]	276.34998687	160.23747303	296.27648778	66.58389449	8.67379002
##	[1836]	101.05378307	211.23591989	100.70121624	302.22764410	249.27058555
##	[1841]	108.61799881	154.12680469	133.11833560	248.42684783	155.33664189
##	[1846]	4.89571333	205.58441445	75.14559515	239.04828258	94.59435984
##	[1851]	289.98982131	273.06368575	147.82840863	22.83143945	184.89719182
##	[1856]	185.46538688	317.94456862	107.28781261	213.37656774	300.33792064
##	[1861]	183.95418718	221.34765245	28.72274786	277.26695828	160.36460698
##	[1866]	71.44201092	131.97415732	283.61800946	158.58989991	215.28119288
##	[1871]	90.40142015	261.45865694	78.75182547	118.28678206	75.36780640
##	[1876]	299.44221631	132.82458507	43.98380972	292.59671137	111.24524035
##	[1881]	272.93788023	45.64325720	115.01851872	78.56162161	14.68990289
##	[1886]	251.05532870	63.73495504	125.39207816	103.53991829	192.67388962
##	[1891]	173.20693746	317.06359446	81.21313572	235.28636582	312.83461154
##	[1896]	178.57479736	125.66661105	263.90056297	35.96302748	171.44892931
##	[1901]	142.02610716	87.66630806	50.35441145	278.98818359	179.85435404
##	[1906]	176.22072265	189.55689140	232.90011607	204.45609108	196.62405275
##	[1911]	16.77339219	180.85048094	187.94924170	201.14146404	199.00500640
##	[1916]	26.32641345	24.84563589	219.87030074	265.69714956	46.69116005
##	[1921]	250.72962314	155.66402532	316.56483375	159.71358545	179.92337123
##	[1926]	121.04224660	165.96390314	23.77081349	172.31115013	307.53952026
##	[1931]	168.89924467	139.89102460	10.32543890	12.07493782	15.15145406
##	[1936]	51.50689140	150.11116587	257.89567195	89.79120515	241.53087527
##	[1941]	166.98426075	92.46310182	5.56070447	213.87184955	21.43230870
##	[1946]	267.64365658	43.30980986	209.88099471	268.14327322	82.44735874
##	[1951]	43.51849124	244.31629255	67.83879466	85.75027175	170.18598229
##	[1956]	151.71739757	119.50197279	248.11197713	178.62527043	49.67571877
##	[1961]	316.61390349	78.22285771	41.72112390	68.05796333	121.60135947
##	[1966]	115.07877402	96.85185567	14.20790836	299.13067289	181.98944956
##	[1971]	70.65687843	280.94757609	149.53241803	173.55194069	251.00741565
##	[1976]	207.31848717	46.36580706	102.92396069	304.33778644	60.22351712
##	[1981]	240.12935951	146.93071209	45.23681566	65.66178434	216.09391987
##	[1986]	44.16966736	132.97398426	144.39905018	199.34290230	80.37577517
##	[1991]	148.52910839	52.96295330	274.49806511	50.09660713	28.26612279
##	[1996]	285.89368701	96.19856268	240.66773474	128.51412736	143.53859395
##	[2001]	51.09567367	46.24507241	47.73772545	164.61896315	157.70473801
##	[2006]	197.22968593	143.17532502	17.81654887	1.72681905	70.98694436
##	[2011]	272.30823167	85.55078596	191.55208744	194.75190312	317.49070093
##	[2016]	61.18078746	241.08498707	77.56394789	104.78471041	1.13135830
##	[2021]	319.17572595	140.17904140	319.26039837	62.95013413	35.67257464
##	[2026]	80.23566417	217.75251299	184.72137496	133.23113479	233.33799794

##	[2031]	183.74071456	184.84324768	188.79972078	71.33706883	33.11753556
##	[2036]	235.68192862	195.96920200	304.38795537	307.16027699	238.34753603
##	[2041]	139.14564662	55.92804395	139.29218203	243.98662008	294.08937953
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##	[2051]	188.92587803	30.91847546	304.28487517	52.07780436	294.88200404
##	[2056]	40.88802330	212.07666896	250.89341678	244.67621177	215.22249937
##	[2061]	37.01308876	272.41647601	197.74771035	267.65169792	54.37703192
##	[2066]	3.28999043	103.51031400	86.29847184	264.08363394	298.77175584
##	[2071]	40.89327477	292.26803400	193.67486328	128.09125327	213.05449709
##	[2076]	245.63176870	167.00662404	126.24240547	309.05178674	15.67537300
##	[2081]	49.05864693	222.98850097	232.89147943	34.68141295	148.66193458
##	[2086]	205.48017159	127.07550012	316.93768226	217.18681917	100.90190642
##	[2091]	49.20616321	96.40055545	30.24496980	8.60016219	99.35465738
##	[2096]	237.58043796	307.22950794	133.05685207	167.11533032	21.60631321
##	[2101]	201.54937774	113.09241191	135.90868868	308.40601303	217.91951582
##	[2106]	229.90844302	54.60152492	65.15490852	280.49590781	268.00720818
##	[2111]	230.60065359	89.94027875	67.19708696	158.12810227	166.96089864
##	[2116]	70.34617975	244.19414476	7.84628898	227.67550245	269.08403173
##	[2121]	297.86274306	211.86932713	86.38151020	69.83470730	277.70181477
##	[2126]	7.86289655	272.00855181	167.65858464	139.34806459	298.01431887
##	[2131]	52.65612669	121.21228546	44.17437986	47.91074470	216.46311916
##	[2136]	179.87716988	150.92750169	259.55205396	307.96433032	164.93116289
##	[2141]	225.19128628	57.88144320	113.58942308	15.96889257	48.81718487
##	[2146]	31.76694997	89.64738436	123.98406468	202.93081164	226.26035482
##	[2151]	104.32586201	308.85866083	222.86542319	51.54502213	118.09991732
##	[2156]	96.70968294	146.54904559	263.45047884	74.41259228	128.74311209
##	[2161]	310.91609694	39.81463872	201.69282451	225.23744188	189.18409094
##	[2166]	318.88520680	14.50755246	316.82321213	238.49801898	139.75987129
##	[2171]	48.96209560	143.63685615	59.62390803	136.49554640	262.64955729
##	[2176]	16.12125255	104.12228853	269.57181744	12.86393374	253.39934759
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##	[2191]	214.90639083	55.05687468	214.30926986	297.71329008	272.31192268
##	[2196]	249.94343527	219.46954601	189.23811585	129.04742941	41.07139602
##	[2201]	262.45262861	229.35055114	252.26395279	5.86112037	55.83684511
##	[2206]	191.56766988	25.80442332	226.34110138	180.37400775	90.49853094
##	[2211]	125.45816503	215.27301371	51.89749353	34.72060911	170.70215359
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##	[2221]	85.12289003	202.40025267	265.84250674	16.43379688	317.54721157
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##	[2231]	254.51414481	274.83268425	151.04625084	207.42490858	104.01333906
##	[2236]	149.16398659	301.57033078	78.54857557	7.18625896	309.46298577
##	[2241]	83.21563423	209.31430928	24.12199602	310.15875168	293.93258363
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##	[2256]	75.59643112	197.71520972	108.94376494	18.68512884	314.22266312
##	[2261]	220.17283894	275.89831069	147.74255477	40.32870352	217.69454248
##	[2266]	6.38361126	52.14676470	286.66106723	49.01047826	82.76530996
##	[2271]	78.08789767	99.79677036	70.79894066	9.77498971	288.97171490
##	[2276]	307.00718857	301.71157166	145.05601279	140.05280077	16.05316728
##	[2281]	115.14280587	286.92610070	118.74021351	161.05120361	168.83177795
##	[2286]	54.48642083	172.35160857	35.35790242	196.51361100	174.39245664
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##	[8941]	215.31604707	187.66702846	39.20094810	213.22550155	152.11703025
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##	[256]	108.30902057	24.65041248	216.27185794	245.60499370	188.33288394
##	[261]	98.46244632	342.43259876	414.61989303	204.76857787	275.13415915
##	[266]	152.68184897	-146.36749442	18.09222483	-102.76727813	340.12015074
##	[271]	174.37053359	216.32639422	-28.75261935	264.08884619	464.56601243
##	[276]	78.43488845	241.95497685	49.89176252	174.83869131	16.30206430
##	[281]	94.59564974	374.73243910	155.20630491	161.95941816	-188.46941376
##	[286]	55.14745643	34.11584235	40.31515996	264.92537729	356.32103470

##	[291]	-103.37233365	203.91753605	-164.81200514	-21.12198014	264.15352610
##	[296]	158.85821154	-32.98064157	-225.31062617	262.45574389	253.51597063
##	[301]	472.13330770	375.49424710	118.30037868	137.80689451	129.69930050
##	[306]	97.81999861	-153.57993564	234.27385046	292.09586920	26.98100272
##	[311]	73.30213124	143.04326442	-68.50243221	49.43490865	11.50238216
##	[316]	31.75016435	242.84287643	264.09299709	170.08852983	101.29071537
##	[321]	129.38891179	512.63409794	135.92775676	94.51002261	131.27810579
##	[326]	74.87085736	193.40503086	314.47206956	186.66886795	68.42210533
##	[331]	208.45880226	50.76698085	19.56223750	268.67607579	288.82751922
##	[336]	140.50422063	14.11415287	316.14779199	281.21405854	438.20173311
##	[341]	202.58812937	356.40093574	-74.37310656	321.29205570	-34.20227593
##	[346]	69.98953185	239.25320210	195.25892412	-7.99848731	122.83491822
##	[351]	180.95480557	65.36207513	182.09786890	33.75446233	223.76323898
##	[356]	285.12007012	291.10162420	19.84762793	198.26982924	72.79270155
##	[361]	30.80180622	39.65088613	123.76128114	223.76290717	-34.72110008
##	[366]	222.00345224	-104.32650067	195.90482112	119.52357517	-25.51003790
##	[371]	212.33552158	38.27312542	275.58996166	-36.22261904	-220.40170459
##	[376]	130.11977593	186.25835166	233.33421170	334.64894114	591.64072935
##	[381]	470.95421669	227.06893147	135.27607170	481.80028342	254.03525414
##	[386]	56.79656471	267.56226785	184.13143895	122.80273312	22.51574037
##	[391]	-34.50166984	202.76195309	59.59429491	-72.32503236	-61.18364562
##	[396]	100.25363390	391.73589515	-21.12895818	202.68368910	36.44577257
##	[401]	-136.00675001	36.99599207	71.65534013	159.57102706	194.70462930
##	[406]	259.06468926	92.34743591	389.49590477	222.14755760	31.72116484
##	[411]	158.82293084	132.63162895	352.71760992	39.80030456	204.26284295
##	[416]	116.41999598	213.37318561	364.60284933	291.90443442	440.59322016
##	[421]	-34.15594344	-85.92997337	201.70029828	177.40805122	373.21716957
##	[426]	-2.23251416	176.69729862	240.15812414	90.98960366	-95.50585629
##	[431]	66.29820398	228.99527770	322.05662463	8.50396329	261.20005347
##	[436]	205.56402728	297.80379380	147.23543814	587.99114488	177.74514214
##	[441]	350.82952002	-1.97558420	268.77899831	121.26998150	189.02914517
##	[446]	106.54265485	42.92817149	185.02653286	5.40603194	46.85284458
##	[451]	183.97707584	186.96636414	-73.39975317	-51.02303206	-74.28503436
##	[456]	348.89445411	-73.14023206	269.16957152	195.15070897	413.20171011
##	[461]	139.19709439	-77.48341650	238.54007292	441.18394601	153.33026157
##	[466]	230.51745221	52.00241744	-124.82651000	-194.06371331	302.74645473
##	[471]	379.41839676	76.60379741	119.69429417	97.99523559	238.27256572
##	[476]	492.04486792	428.48324819	429.96198103	139.63699957	409.26956447
##	[481]	10.11252515	72.38806181	59.16005133	169.16292877	390.09208967
##	[486]	77.06973589	312.17132616	302.42509272	29.12935064	-120.55380786
##	[491]	204.51558758	-96.40603736	108.65607477	-36.17826382	35.73478740
##	[496]	174.04421685	87.88632634	210.57781289	544.97090837	369.30030347
##	[501]	-6.04660726	326.39476928	145.31969469	148.30763851	233.65552104
##	[506]	103.17169380	98.11452937	62.93432981	185.53906134	-3.40334676
##	[511]	281.69084309	275.38778343	160.72201797	243.37000661	146.63733798
##	[516]	263.32055777	392.56819034	-100.95576542	118.88547756	231.64748241
##	[521]	3.76859273	74.35334805	121.65944326	338.11371326	169.46403572
##	[526]	-113.77590275	264.82140082	163.98050258	124.12968911	173.73554209
##	[531]	172.47549375	274.03419427	-137.56038409	109.25478274	-202.35187271
##	[536]	142.89918299	166.94253238	151.18522600	217.81933006	59.90428737
##	[541]	180.89377556	140.59664642	404.45913428	127.96759270	5.64671529
##	[546]	-88.96379702	187.17440027	167.40995803	251.09097173	170.04412399
##	[551]	-133.08161628	133.75271418	400.85843020	152.78717465	161.50408170
##	[556]	327.24204052	82.77347575	360.23609636	206.57087873	61.83004942

##	[561]	73.14510512	193.16678117	103.60275506	102.26791726	93.86390881
##	[566]	298.87619359	100.46881539	123.40854012	-89.83173391	85.16066110
##	[571]	186.66991242	317.04464878	286.21240517	312.55346740	13.64090644
##	[576]	116.24048890	546.94274711	81.46256434	97.60791275	239.67433349
##	[581]	252.76785044	46.25976839	-37.63407515	52.20450875	167.56789155
##	[586]	-50.72613320	161.71845050	301.36394323	269.76779985	160.39664271
##	[591]	-151.59417273	357.03131437	301.53132309	77.58537092	365.80467050
##	[596]	223.70122909	193.07387752	148.17839631	337.54120789	127.56967326
##	[601]	234.45401444	77.40062759	268.05019928	158.02808326	101.36617849
##	[606]	-115.16200163	-92.79606345	112.41633418	-10.15890671	295.00772202
##	[611]	209.72496660	59.71062076	92.69963727	196.32285045	95.51982740
##	[616]	239.97393331	165.85534909	230.48123647	149.05839959	352.93691837
##	[621]	397.14222196	177.24011834	85.73756643	199.97595844	-87.71369798
##	[626]	253.26510432	97.86273814	144.27320067	266.62247863	276.23799350
##	[631]	176.39125969	148.68660831	-133.01799671	379.10787643	253.03000013
##	[636]	536.72544184	115.22317403	298.29616059	116.39684659	38.85198762
##	[641]	108.47184552	274.02567633	59.66309535	282.63179388	244.12000512
##	[646]	365.46317762	-103.17849442	401.53170307	-210.78447149	233.76246069
##	[651]	191.65642816	206.75472445	11.28791611	339.01747286	189.43781574
##	[656]	75.82936818	-10.64552331	188.66850061	142.79425694	363.79039324
##	[661]	9.17217742	302.63645016	219.07212653	-13.83069936	166.54010144
##	[666]	155.79037321	421.53878151	208.62721756	78.08904737	318.48082963
##	[671]	137.51059303	-102.15619616	267.48746939	226.55196732	374.30595352
##	[676]	122.50453363	183.09073290	7.13064739	210.88705558	108.81690293
##	[681]	-0.73310769	152.95777421	49.22217384	-54.15715703	36.48620985
##	[686]	37.33628238	375.73676922	217.52794489	217.54534601	176.31992747
##	[691]	69.72168920	-106.21324337	438.52548525	439.56365384	211.55449551
##	[696]	112.61708327	151.47286850	345.64780362	8.40882519	212.48965383
##	[701]	219.85935057	-268.84673820	81.98787438	99.80857301	49.10468084
##	[706]	-74.62976800	234.86813127	38.66940491	406.33486695	325.33060298
##	[711]	538.90647868	194.88210035	101.33636717	119.01642277	226.71640210
##	[716]	350.53740561	220.78536250	-17.51977447	109.47301868	250.43077873
##	[721]	360.80672629	-152.06235456	12.38077554	108.51753426	123.88178571
##	[726]	148.09783918	323.73649299	514.77283333	134.26688722	3.91471431
##	[731]	201.64101312	102.14210684	176.42181694	130.89720780	38.60547774
##	[736]	41.10145685	-113.04158031	84.13319179	183.35781758	162.59939708
##	[741]	245.90594186	303.71768862	375.96335335	360.69791141	220.55699754
##	[746]	185.21875643	77.36312260	76.90265878	162.36739897	45.09137509
##	[751]	124.32416143	30.39736638	192.35191082	205.10995112	-0.96402883
##	[756]	-152.74293579	-367.44385619	494.51163851	20.88689527	234.74001912
##	[761]	268.91907821	91.21064272	85.50945171	77.38121563	-89.93247607
##	[766]	18.70534391	-10.63249025	79.86287495	92.51862294	155.69506095
##	[771]	124.05550677	220.48532460	124.56137035	180.00941541	206.05179815
##	[776]	64.68556608	370.30258386	219.55733220	166.31381856	235.11302110
##	[781]	-41.16597224	201.41207758	296.37266612	-10.52279355	10.04207218
##	[786]	28.30800169	364.98092022	118.57363023	456.74990874	-14.92866008
##	[791]	-18.50848572	-27.14848887	63.81537853	72.34946951	287.68823840
##	[796]	121.57856456	162.97946814	188.13936719	106.00706917	119.26039954
##	[801]	502.54754470	108.74638873	468.33964279	183.18251829	-19.75571356
##	[806]	-204.77412088	136.62378987	215.72860584	313.84550573	231.18613105
##	[811]	92.23402540	-58.96392743	242.71516808	313.58650781	-170.77571003
##	[816]	54.39745411	59.48582186	199.44898861	163.76977519	215.88926807
##	[821]	423.01843800	209.29076336	462.92574800	79.92090728	275.49096448
##	[826]	357.93317654	435.20769761	254.77895354	223.01688383	-68.53256924

##	[831]	211.67781548	479.68997340	93.71687822	-83.66252300	309.09465067
##	[836]	102.15266431	-157.28614982	35.33440176	-238.13274486	80.19063320
##	[841]	126.43587135	119.78812763	331.71518542	269.64866662	417.48161210
##	[846]	431.53253451	113.09528430	260.96913436	265.15349496	163.62496376
##	[851]	29.30311428	326.21303083	-7.93327017	215.29069836	161.29812047
##	[856]	217.57300042	67.61790118	249.87298365	236.58615169	169.60322698
##	[861]	57.25505375	178.37040882	77.17033812	-52.77602864	11.29409483
##	[866]	11.50092953	-35.88769680	106.70276726	193.35903338	-9.40085426
##	[871]	357.16273562	-197.17800660	15.76381657	295.13558660	348.23394627
##	[876]	217.06902643	127.40001204	369.25705765	-5.92185116	113.40934085
##	[881]	-79.27598263	216.29315181	105.72460976	262.31047633	301.42468419
##	[886]	343.35500670	167.86263425	135.61440913	229.55646803	341.50492778
##	[891]	293.96294342	108.59614753	-94.27982480	172.43210586	371.83843942
##	[896]	347.89552702	72.93543958	-55.59427192	480.19128700	331.29075918
##	[901]	31.34518660	141.31131979	127.24911732	192.39176548	303.67624845
##	[906]	37.42030060	152.06011191	58.87392003	314.55068852	430.78805711
##	[911]	60.73576227	89.20727662	241.47049027	407.31856230	251.48073144
##	[916]	194.25182057	-22.12442127	-287.77721022	-76.74592626	-156.26011239
##	[921]	222.29135646	160.22576405	153.86026026	286.29669691	135.39438232
##	[926]	375.65374125	57.34377428	165.73688589	141.46256397	-80.02922429
##	[931]	368.41521912	-109.96012711	496.57708793	85.84035207	149.38812176
##	[936]	195.97575553	63.94614205	408.47257580	109.46174216	253.97397124
##	[941]	97.25096578	-71.97932798	-101.76514309	-139.38868600	325.82832416
##	[946]	96.06657896	194.75878174	106.95016917	164.78721754	362.94999375
##	[951]	291.99592362	374.72028509	262.40762049	304.99231007	-32.57676305
##	[956]	14.49236633	15.44193840	-43.57089974	63.13756005	152.98463665
##	[961]	113.64970998	334.37217857	236.57502196	35.77741327	80.36267524
##	[966]	340.29885908	-106.03252181	102.49291009	96.86240063	60.91969445
##	[971]	161.65072060	-99.61255555	-32.90314815	326.02550869	369.20518941
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##	[981]	281.38146849	430.72449567	112.64424104	26.98495320	214.05328147
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##	[1006]	188.86488049	190.33711482	43.83510380	-40.00981162	388.02853611
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##	[1016]	260.22088045	96.79431984	-217.79576494	330.17483548	196.95947468
##	[1021]	192.07567094	-16.54433799	161.43306790	153.70377403	190.22389087
##	[1026]	185.04718638	25.05490562	243.19623292	176.90295850	125.84784336
##	[1031]	105.71613173	371.64892896	87.81533648	183.43883970	234.02160160
##	[1036]	291.14012934	275.89511225	84.96527455	96.32338817	319.88581716
##	[1041]	131.15750850	294.31912218	-152.96470015	229.28235126	150.45303663
##	[1046]	199.70360506	46.87709264	-209.15203472	281.23565873	-120.52890938
##	[1051]	17.22394997	120.53219932	154.20978771	131.66632686	161.63927228
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##	[1061]	151.37042626	238.56439148	70.53517891	335.59840878	189.90571327
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##	[1071]	-84.10889126	384.16909520	298.06391567	-122.54005857	107.39696981
##	[1076]	300.36133579	321.64252697	412.56187425	150.24972380	281.22104984
##	[1081]	167.55110611	222.61678831	36.53586211	119.46529113	179.25926111
##	[1086]	475.69465930	151.20405283	293.19128457	225.42452786	-31.91824386
##	[1091]	-100.18282002	317.08401991	333.63261185	-128.96868056	251.28574688
##	[1096]	370.36855074	-77.63332560	82.95826183	427.10686360	242.30031293

##	[1101]	14.74062178	60.12957906	-4.89820883	85.04620271	291.94197025
##	[1106]	15.53045449	102.52674563	314.54394132	23.17189244	26.71999035
##	[1111]	331.28657352	132.41065278	63.60500492	237.07376395	258.56002468
##	[1116]	-51.53293573	417.34628273	-1.74666005	176.84544753	231.63538165
##	[1121]	424.41961724	233.37664534	357.62305471	167.52901603	174.90444571
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##	[1131]	10.50917704	329.99635905	303.19946202	63.74397320	74.56572165
##	[1136]	362.74053542	40.52980098	70.69666207	-111.57811490	265.36649142
##	[1141]	198.16920859	41.17114674	73.94849772	180.28265524	117.02519425
##	[1146]	35.86188712	471.93104646	176.97288743	298.40072281	233.38775383
##	[1151]	68.40987433	107.27359444	150.46015135	127.13562665	8.98046350
##	[1156]	341.08266398	16.45826067	12.87581655	385.32175752	276.47460474
##	[1161]	81.96706092	275.38441951	348.37000150	-222.46682015	123.20001743
##	[1166]	60.47608799	153.38952555	266.03944257	380.78384373	253.42690900
##	[1171]	155.34078293	136.78715014	369.40543243	75.31901816	-41.77036485
##	[1176]	-118.14476109	137.57638789	54.61806581	-35.84781914	9.88366497
##	[1181]	220.75264579	-179.56330061	259.43119537	162.08242851	-118.95417607
##	[1186]	192.26129497	50.69197060	185.02860144	-39.41259678	183.55154644
##	[1191]	155.99791160	17.39228403	-315.85621391	114.24097672	251.58286388
##	[1196]	26.39669587	478.28797394	-62.13417680	-28.84886377	121.47850860
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##	[1206]	-6.01160727	54.77789126	471.14504104	73.01659778	-10.75310391
##	[1211]	258.99239562	400.72917012	16.50530881	90.61584352	228.45090361
##	[1216]	-23.76231993	181.23642870	-155.20174243	103.49235836	0.57962306
##	[1221]	15.28825559	205.83542212	90.50868442	134.75749158	-10.63380736
##	[1226]	191.96308372	150.26698883	71.76641049	14.10314261	257.69805111
##	[1231]	183.40610813	9.64986155	388.71362111	72.71163362	341.20759644
##	[1236]	171.32558080	15.86253630	-96.92899748	-33.83392965	155.32036889
##	[1241]	179.09129607	16.50840741	141.37033255	365.59036172	157.28268346
##	[1246]	168.05656995	236.83430458	384.29845925	-120.55359330	-41.03902369
##	[1251]	-124.26305639	-14.20859922	276.14528178	217.77743246	196.07261803
##	[1256]	178.13027440	47.14086165	146.48591634	200.59739539	344.54633393
##	[1261]	37.66031126	343.05658358	264.08487912	266.56096391	155.41195369
##	[1266]	-67.61333808	229.28379037	41.04096215	123.62591677	467.54452954
##	[1271]	-121.02365185	212.41396281	640.11831412	476.66194165	-210.89783175
##	[1276]	11.52674418	-180.79864755	197.31222266	128.39492025	-59.97127406
##	[1281]	292.10323709	-179.12636678	149.91597095	156.08437559	205.33253877
##	[1286]	222.96791189	234.66519432	16.88777712	169.42448249	177.48726936
##	[1291]	394.02967994	82.62032471	77.96772838	-28.83575456	675.84395926
##	[1296]	323.80503133	427.16393614	48.41700957	29.20592791	36.60018733
##	[1301]	367.71732224	293.24155072	399.83539820	288.50363242	202.94966512
##	[1306]	282.96426956	79.67042792	654.26047948	294.21544242	-44.89385799
##	[1311]	301.48597172	94.46024613	289.34961024	48.95987651	342.61281974
##	[1316]	53.88269070	354.61521941	55.29525871	376.58937338	196.94039476
##	[1321]	131.68600298	57.63331867	-9.89336026	101.93345426	-195.30037193
##	[1326]	264.37622142	116.80077753	232.98340969	142.00594599	73.50345372
##	[1331]	761.39234959	211.14526747	157.10428995	-53.27744385	99.28869728
##	[1336]	189.70542794	259.88106465	198.61883428	-179.75066592	90.73795237
##	[1341]	525.47567104	106.94693105	59.68341773	182.31803109	103.03659495
##	[1346]	277.36324724	200.88639220	78.97994917	-59.65336186	72.06456692
##	[1351]	400.54859849	366.29575861	96.24016638	39.50953571	193.09389045
##	[1356]	130.13101333	-154.02509928	-47.14180574	302.28334456	189.56553874
##	[1361]	197.52862326	195.55115690	-4.95674668	260.34538776	143.35927550
##	[1366]	460.45068970	215.45709434	258.27669188	191.81414150	3.06560308

##	[1371]	363.47741579	221.85899078	216.87097883	411.06176729	260.04285588
##	[1376]	-50.50858153	-81.83995621	184.46159273	431.40247702	105.74474040
##	[1381]	199.55276659	203.00758630	270.93256224	307.37348651	309.04243965
##	[1386]	267.51513400	109.32646298	157.30617694	248.99725780	323.67326488
##	[1391]	274.67811105	247.17907199	483.66080672	212.04573657	200.09705995
##	[1396]	233.79996827	331.49646957	334.33709455	115.47220357	423.04155562
##	[1401]	51.66990809	172.77282570	-55.12478151	80.34457421	90.37842912
##	[1406]	55.24743000	87.56023642	303.18732268	-25.60871945	70.13489423
##	[1411]	270.72575515	-113.96431894	281.44287365	82.71606821	297.36614099
##	[1416]	-29.17923308	73.74970238	152.35790432	116.10166034	12.40281242
##	[1421]	223.35818806	246.35814402	387.06555342	336.28165970	50.45411264
##	[1426]	147.04682258	334.06391733	-36.81231979	-84.59528950	224.71365185
##	[1431]	31.64765433	238.57906382	557.77763328	316.82804297	267.32638376
##	[1436]	116.94375781	418.82471164	-50.38627993	329.01207271	348.88214890
##	[1441]	-70.43923751	5.50137547	-35.96685949	238.14695256	305.25599683
##	[1446]	44.04604632	356.15222861	47.58132020	-106.98729528	14.47649488
##	[1451]	311.73701103	178.29034068	167.14781325	238.20459823	49.34347394
##	[1456]	335.40979873	64.39713238	83.32506275	10.92208130	76.47976294
##	[1461]	335.49051421	302.15366483	144.66306043	48.29312876	147.37715876
##	[1466]	5.57296887	106.54335544	46.77589585	128.52216182	85.27755871
##	[1471]	126.31905813	243.19974349	228.14480307	89.21400113	275.58261348
##	[1476]	-145.73024611	367.55474967	359.97274928	276.27675944	209.78576287
##	[1481]	13.63002179	-80.31678555	321.50445958	163.26325012	440.33147007
##	[1486]	43.90314477	-11.29488280	42.99004106	132.81775996	-37.01037397
##	[1491]	484.46573803	-79.15995211	-91.67186581	111.96603483	37.70024183
##	[1496]	-18.58513948	573.84743362	9.24502997	351.17970050	388.34655711
##	[1501]	83.40126219	262.71376256	-112.16774958	95.38141902	71.63852337
##	[1506]	238.46191387	385.80258332	-59.17563287	397.16043048	448.88993840
##	[1511]	110.06968629	-90.81887629	247.21676961	176.43986864	33.46948614
##	[1516]	462.49531703	44.44085310	195.63396745	228.74964400	-82.67946600
##	[1521]	393.97121074	456.67897533	248.57102175	347.99057165	65.53199028
##	[1526]	112.17810309	249.13292414	210.71984791	29.86849835	170.89203416
##	[1531]	358.09326514	44.21294039	79.67646872	-15.98944281	280.84077536
##	[1536]	30.12850003	252.88695538	5.41464124	-3.48217066	146.36954390
##	[1541]	-37.56187866	394.07937370	206.01066293	107.51189263	-64.65532068
##	[1546]	-220.81499832	398.22776047	448.68226496	294.25067492	5.72777028
##	[1551]	386.17599251	290.22029571	-51.47686592	446.24463132	-114.48602904
##	[1556]	-146.22607948	245.12193286	-19.34632754	-179.34543156	-50.96418215
##	[1561]	628.87530360	241.18728051	-55.05133063	86.91528868	227.37187848
##	[1566]	109.37463231	217.51494538	118.52619163	298.17465870	291.12465232
##	[1571]	310.08086327	130.27577992	-93.63117251	461.10087539	83.65417157
##	[1576]	82.98790321	554.16460420	314.74353895	144.15911216	272.78451433
##	[1581]	215.68534227	185.03055458	85.14384120	361.06248414	271.01388127
##	[1586]	131.11495968	283.42372519	158.13742866	192.02036022	394.26984845
##	[1591]	218.46083646	219.97716004	288.58442305	80.76515499	-15.53519814
##	[1596]	352.28217110	365.89811708	284.39768369	334.48003309	385.25599202
##	[1601]	75.75590374	379.48686427	184.32945055	-214.99491842	241.15026266
##	[1606]	215.44041623	-398.19738396	-4.31935758	-12.69279926	104.64890166
##	[1611]	112.48027291	228.50451860	232.80600562	-155.69526058	143.58576859
##	[1616]	61.10213699	203.51178111	131.67170505	-14.93745299	61.94424428
##	[1621]	254.40964493	82.27260171	120.68152167	-68.42513166	153.29177488
##	[1626]	207.72789855	-48.78904925	494.83095690	481.20209597	210.76003821
##	[1631]	293.09624706	-93.44355862	153.87461060	220.28463268	54.68886099
##	[1636]	-221.57139200	131.48247557	109.90705167	120.61332085	164.71153940

##	[1641]	262.45768697	222.00552160	346.44354890	174.06172274	223.03493378
##	[1646]	124.48217184	193.06791259	-106.60831253	-17.97755614	105.41759524
##	[1651]	277.92070863	-30.20318164	52.38420234	412.14594704	253.44183641
##	[1656]	-25.74423244	217.06014033	241.86354937	240.31191501	322.09568036
##	[1661]	247.85435918	-131.81649429	104.09013845	245.23044732	197.69768493
##	[1666]	93.25817492	194.05739860	234.96218145	439.94603506	240.62444750
##	[1671]	16.80272695	375.90312301	198.34657085	79.42194268	305.05239551
##	[1676]	307.68847188	298.05553934	240.40451679	-160.96790089	312.34328880
##	[1681]	237.63779492	-93.64721223	87.78447397	330.74858950	-97.66409757
##	[1686]	160.24152082	103.66956359	374.97610039	457.44227623	236.25417311
##	[1691]	285.77244538	-50.95146367	152.66267827	172.46653673	37.46649755
##	[1696]	18.59699931	173.20752713	432.83118624	348.78785582	343.14759795
##	[1701]	6.82889498	166.33801167	-114.90188563	136.33593810	-10.61601041
##	[1706]	332.20083158	202.33099554	-102.19967230	-221.14685324	376.88305942
##	[1711]	176.95478803	218.84507594	15.54356927	218.27304269	175.04867338
##	[1716]	24.19172329	151.28033768	166.09834752	160.18102294	221.04726856
##	[1721]	134.81105379	-207.29899632	136.86162565	340.94150905	-8.73937053
##	[1726]	77.65603403	88.82173542	60.54938751	-40.82805698	129.53261644
##	[1731]	261.23882535	258.30383942	411.91445947	100.96108622	63.46741666
##	[1736]	157.12823278	87.47105875	143.88314945	-59.89168498	257.34156396
##	[1741]	209.61429167	27.12960026	1.72995330	202.57158185	71.76412727
##	[1746]	-44.76378084	101.07836142	83.65945629	322.65827709	74.30286940
##	[1751]	139.64742726	-53.89599354	307.88971421	187.03482459	-132.91522638
##	[1756]	92.08715753	365.78737585	305.60190196	235.40478186	236.58546977
##	[1761]	170.49168177	194.97167698	-20.56654757	399.68348945	277.89811784
##	[1766]	56.28080100	109.91144890	180.32695161	67.56324046	-158.09040575
##	[1771]	103.96612915	212.11174940	58.68097026	-25.89033546	214.57375389
##	[1776]	398.86475577	-132.48696000	76.93268082	-185.27031516	226.85169234
##	[1781]	-184.29003102	240.94512658	228.07873483	142.73849230	314.43182239
##	[1786]	352.04532387	256.03181818	301.42283412	29.38011026	335.71106261
##	[1791]	1.01073304	310.97190214	145.96225570	397.63541867	252.53573860
##	[1796]	164.08024439	230.27829727	348.69050202	-45.38597400	439.79557836
##	[1801]	105.22749734	231.77139571	-132.21369021	116.98706990	114.32301083
##	[1806]	323.70655524	83.31059683	316.65014215	293.81385720	-10.47839072
##	[1811]	446.97907332	-86.46640817	-96.73323144	554.42015886	-14.43910631
##	[1816]	100.43595117	65.33255708	117.09763042	111.61211364	280.89974604
##	[1821]	165.39556380	158.03044505	144.60783115	160.05424461	142.37632663
##	[1826]	265.23190730	146.38350308	271.74388947	155.11329323	292.76930402
##	[1831]	273.44074950	6.31794674	-22.73912546	-85.09152237	-27.31925664
##	[1836]	-323.07958389	428.52842264	322.83842996	24.40164602	75.64918871
##	[1841]	459.36621117	-94.27434182	156.48419880	-61.08455725	229.55241186
##	[1846]	406.03994821	274.96619483	231.74729353	28.27034014	386.52869962
##	[1851]	183.89925031	350.25968590	264.49204598	99.98897754	237.20905048
##	[1856]	162.59839506	259.60579192	-169.96119942	95.27294009	-56.34717376
##	[1861]	219.83970776	-12.56245684	-28.50317462	86.79625388	50.95616325
##	[1866]	77.55413906	207.74624476	150.01841687	197.69114275	-33.43620942
##	[1871]	211.80508775	47.22922882	142.67153425	-8.26901303	211.17124911
##	[1876]	244.06845795	178.89840580	177.36274563	345.79736629	247.05541304
##	[1881]	299.94655988	100.14553568	123.05765384	278.46792489	185.25326124
##	[1886]	221.68929348	495.48062821	314.80973331	268.50389644	519.52405150
##	[1891]	16.98884363	288.48511244	71.21401119	215.65400250	-75.53356831
##	[1896]	-16.30221595	330.29435576	-73.76400422	-44.85832599	221.00787809
##	[1901]	72.93696041	3.77426771	-6.45133796	82.40396750	312.96762847
##	[1906]	110.93354390	279.27976138	-38.42991588	175.12397664	184.81990533

##	[1911]	180.59498435	17.34559672	165.48934641	281.65466010	157.38340805
##	[1916]	226.00651952	271.88182736	373.94646481	150.29266672	-48.81076767
##	[1921]	295.64836711	383.47573896	160.42604230	9.71254435	-58.29066053
##	[1926]	29.73778032	181.19690419	186.39539212	199.46536237	130.00379122
##	[1931]	60.12276225	-53.66349490	304.44511422	217.00248976	-72.31143936
##	[1936]	181.65044764	151.78367712	317.29619966	-71.99149293	-102.95178577
##	[1941]	142.38965750	297.07888292	150.17858384	-46.35276246	281.15818763
##	[1946]	683.01449351	-39.06703384	249.47528094	216.72169901	-64.89122529
##	[1951]	411.70218551	94.60940827	-114.66225150	36.93019916	-4.61786787
##	[1956]	348.01760827	-147.95807931	260.66377506	354.69192605	408.69874667
##	[1961]	-26.96131133	452.05969015	404.85760298	343.13988771	280.01347889
##	[1966]	-102.91792533	102.44202454	198.65666957	403.28494911	161.74566538
##	[1971]	199.11639661	75.18841927	292.33867460	232.14111056	101.75941606
##	[1976]	121.22556494	597.61265071	160.28921118	37.77093964	145.52462668
##	[1981]	84.93282895	109.10188069	47.55406965	-100.27708471	408.99430831
##	[1986]	337.68204710	283.87241640	241.15726245	92.85914136	75.44193313
##	[1991]	-68.03441463	437.27834595	425.73629031	23.45022459	203.04894913
##	[1996]	22.24474187	-82.84488990	157.26989169	50.50668354	185.58255581
##	[2001]	117.72581664	268.56848192	203.45469661	366.55619528	18.59747930
##	[2006]	28.71978670	147.59883190	357.37378219	2.35724777	235.06520396
##	[2011]	-3.96306207	312.48641081	63.15856660	154.00010962	483.75298930
##	[2016]	196.94076099	-35.31327069	265.56870466	137.14619459	133.58524488
##	[2021]	-15.29043050	-159.49394404	-79.74971070	276.40930359	241.34438210
##	[2026]	85.88116160	-40.98696856	116.67209173	-21.38392313	106.78286338
##	[2031]	-281.29513154	409.10001241	187.47852056	437.21529842	244.16808598
##	[2036]	44.65512351	53.26288841	238.11031858	244.80331942	326.70178653
##	[2041]	-167.72483754	314.15874295	2.66049282	-83.09066468	302.08409456
##	[2046]	199.70668747	157.22365416	187.84835469	-185.44417560	106.75064762
##	[2051]	185.22114330	348.70456908	7.88532950	168.06467374	-17.56622222
##	[2056]	123.04379430	306.67733000	401.81047048	-179.35302244	71.80871149
##	[2061]	458.56699659	15.01284137	212.84699929	42.52452523	-30.93172523
##	[2066]	153.68029530	140.36949729	362.14984502	21.65748489	271.75471357
##	[2071]	-11.11299257	94.75054607	154.85412886	-54.67172359	202.03067664
##	[2076]	394.59498270	111.32549432	337.56212272	198.19414222	14.23375081
##	[2081]	415.74442071	119.02463154	107.52487873	278.30022978	176.61926587
##	[2086]	158.33158595	316.86545171	250.88611644	399.64075388	136.54381931
##	[2091]	261.55093674	175.86180410	202.33055999	105.03441502	464.54939985
##	[2096]	-0.96540550	132.67761928	-19.96692766	-6.66542873	-15.86261743
##	[2101]	63.39316188	92.85698587	12.44114735	40.39008893	114.32327545
##	[2106]	3.97506665	403.08690212	220.78104043	56.99817911	103.39637608
##	[2111]	-17.31879599	481.28986653	153.27714073	275.78936436	113.51401995
##	[2116]	421.28600276	154.61097129	65.76510095	114.69690458	183.08247732
##	[2121]	130.62042632	259.94379581	359.68407065	-38.99720279	182.06172730
##	[2126]	120.82895853	62.54068267	134.09981590	214.63442929	180.89791712
##	[2131]	137.52621228	-81.57375361	246.14305381	252.94343974	240.59936080
##	[2136]	228.99898995	87.62398061	248.41127785	623.58229208	93.49097164
##	[2141]	264.15168471	138.50623231	122.35025602	213.67871585	320.97594076
##	[2146]	162.58702458	-10.17279288	13.24489498	136.77079482	-81.95040120
##	[2151]	434.76596491	452.08658146	263.30540409	77.40394527	-22.19018085
##	[2156]	432.62799981	197.68000993	151.74020037	140.69391873	-30.83765980
##	[2161]	9.51187122	-1.16211119	-36.49808353	225.28719205	287.66467971
##	[2166]	-55.84196292	4.65863963	44.52845724	55.86819261	169.71824793
##	[2171]	37.47382159	244.49356249	49.89691533	139.29006581	283.74751498
##	[2176]	284.57091792	39.93240814	222.16089760	-92.98558327	201.76921395

##	[2181]	154.47218809	212.15557204	153.72551231	-181.89810295	227.46823329
##	[2186]	-40.45885072	134.15069642	57.76884079	199.58670751	275.23839021
##	[2191]	53.26544362	85.48105780	-28.07439152	-135.51055159	-31.13365985
##	[2196]	79.08061115	94.23058215	287.66666311	101.79456539	8.38490075
##	[2201]	101.14861105	139.24063307	203.90545767	299.74401191	316.52279180
##	[2206]	270.49953717	-196.19144552	-54.92348464	149.69284299	35.61106964
##	[2211]	-16.59935297	45.81219447	257.41558704	237.29153879	347.36743693
##	[2216]	157.72601963	-49.02260277	413.00251260	38.60905381	182.73851106
##	[2221]	156.91688606	214.06231451	-17.60810697	-80.82808681	252.03268098
##	[2226]	92.07654702	-139.77041891	-45.15902794	242.21877409	153.58610099
##	[2231]	13.84421618	258.40848566	193.09756705	162.89802206	374.81737868
##	[2236]	58.96491490	185.24167205	404.62666374	129.77346172	479.12961083
##	[2241]	191.93937380	202.07461412	407.27299104	165.63738140	-8.70778879
##	[2246]	-102.82001423	82.27811583	30.95434852	45.43618146	345.23518878
##	[2251]	328.58285137	217.16366424	209.75856713	-62.69621791	408.84130726
##	[2256]	180.04742772	-26.76766358	382.25499583	415.88633736	367.75806456
##	[2261]	233.98480501	-0.98148244	-61.29879704	408.23167461	222.81840194
##	[2266]	103.80244524	48.45038401	322.89799521	12.96100600	324.96623032
##	[2271]	333.59426564	126.55974756	237.70389380	350.80084971	234.90147144
##	[2276]	174.98444336	-51.61847716	73.82973316	261.34435998	44.71040830
##	[2281]	391.98769584	465.73947100	117.41807585	222.34795674	220.10443387
##	[2286]	143.83564524	186.19308990	114.51553469	-12.70774585	360.30755430
##	[2291]	247.54401868	54.32510629	171.55503792	245.27771357	-119.41474176
##	[2296]	177.47058610	-38.19661896	88.12401975	-95.35343799	-100.74760353
##	[2301]	-185.21138965	263.60523611	467.21016116	346.66643385	10.77612156
##	[2306]	48.19489216	356.14133128	-161.72396899	68.24630623	123.57442953
##	[2311]	-107.80819313	406.49169176	227.52104988	350.33708939	105.23036312
##	[2316]	176.75399345	203.41836321	395.75512991	412.46080523	60.39447060
##	[2321]	336.07560024	236.93426912	295.53094094	-65.13271530	116.89577408
##	[2326]	378.71009416	182.05421796	173.93146395	60.92533288	333.29609653
##	[2331]	168.50431238	186.34209652	41.15122554	348.96198422	165.62490268
##	[2336]	345.46344112	147.17495426	170.04996412	189.63006121	84.98862857
##	[2341]	-149.61604648	38.16818973	23.07548733	115.83132490	10.20793204
##	[2346]	133.21310902	147.05433386	418.00035852	127.30636781	466.61595806
##	[2351]	173.23807178	173.60195868	233.52343275	175.74956286	13.20238231
##	[2356]	226.19548896	328.70005662	243.68324628	171.72486732	32.02089161
##	[2361]	319.45575556	225.45745711	100.94884551	61.92074703	124.16363142
##	[2366]	279.56184048	91.73585055	295.91300991	-38.26399896	300.65957664
##	[2371]	146.93095085	378.56147490	230.74536554	261.23032753	-92.17039261
##	[2376]	126.53416647	150.42211903	-105.26225596	-59.39831615	173.68976875
##	[2381]	-39.99190287	55.26071550	275.40076514	285.05600936	96.40171863
##	[2386]	153.24410937	304.26285679	30.13235829	96.94051877	357.12248774
##	[2391]	174.91466820	-64.08173596	109.21352917	-81.64278606	44.13892906
##	[2396]	-43.89007142	5.47848877	24.08488387	83.50643212	431.08252863
##	[2401]	174.17479754	-124.00379004	-156.09874671	17.43598567	403.34374536
##	[2406]	427.08538052	8.23205822	290.01642098	356.88187973	-24.35837531
##	[2411]	-131.06063147	0.43187506	44.36059374	80.57707545	463.47641299
##	[2416]	160.27275808	184.39152107	142.35390280	28.39478127	1.43309647
##	[2421]	399.72007636	111.72319148	220.46731730	-35.73497247	294.85846674
##	[2426]	76.79130074	196.91932268	138.68804937	-169.40586228	367.58543059
##	[2431]	324.71946170	28.54658818	184.85020407	-8.13253338	293.66161495
##	[2436]	267.44264374	-205.92972489	-83.02167317	23.22606285	172.82113775
##	[2441]	-29.36665824	266.10474905	140.36621222	166.98282348	14.24837094
##	[2446]	255.98668597	188.01018226	161.84611390	138.83356090	55.49812349

##	[2451]	-35.55507141	5.22328960	-190.45719178	220.42422086	287.23269256
##	[2456]	-20.08817323	269.03992414	31.02735574	110.27321377	87.27586387
##	[2461]	-259.90968894	235.27494432	140.81688226	211.15662458	549.76248554
##	[2466]	183.84067566	486.89202558	229.50289035	302.27559326	22.90876572
##	[2471]	245.84913383	45.72953413	57.15063033	86.69445717	183.67917837
##	[2476]	67.78097841	58.70956271	374.22750913	112.21076773	-62.09539477
##	[2481]	-35.43993978	-27.70481312	248.96572545	198.15549468	-42.83169200
##	[2486]	98.02836086	149.16650043	304.80896969	460.91754497	308.72992862
##	[2491]	26.19252154	124.70832112	-176.56236276	-106.84920688	-15.67405728
##	[2496]	-106.49939300	152.07989937	409.48846820	95.26016959	285.76417595
##	[2501]	278.26066600	325.93686256	-21.39350770	-32.84957027	426.99291522
##	[2506]	405.78526927	144.49066325	181.24379028	75.80149460	-42.28434527
##	[2511]	285.64024848	-78.18867787	92.08689272	-58.69329622	289.40123907
##	[2516]	-137.30970781	-7.05067188	182.10088808	288.79117635	-150.54105374
##	[2521]	423.96255007	376.96059488	291.68273827	210.49067327	104.82790686
##	[2526]	166.31186263	74.77066295	134.97289795	360.74262259	80.46494655
##	[2531]	49.94363343	269.27487626	-67.03255121	161.64957956	292.36121043
##	[2536]	264.64339482	180.52333319	193.41403186	196.97596528	205.42882583
##	[2541]	245.79536623	56.20000032	-234.58120466	-54.83736916	166.71871193
##	[2546]	123.91951347	443.46487914	-26.60152210	60.62354872	-71.09292923
##	[2551]	175.41700757	87.23279148	200.54581820	442.69393671	104.98309219
##	[2556]	145.44323347	159.46043858	479.02190077	52.76979891	318.22211294
##	[2561]	246.91754708	204.67049776	212.78061237	430.84030961	429.77674105
##	[2566]	304.74673434	-200.42151113	218.13220488	220.20628420	228.23678154
##	[2571]	161.68926895	243.03425842	400.81936840	163.40003331	230.19016547
##	[2576]	-13.85636940	164.31666900	272.06541959	328.19882268	130.37333589
##	[2581]	156.63867201	-180.75861872	364.78928211	285.30232585	135.91967516
##	[2586]	251.29869734	211.30426934	184.76708861	449.49717284	-43.12505533
##	[2591]	29.27196138	228.86527163	175.03617502	55.66685450	321.38694005
##	[2596]	274.61493180	350.16531075	2.25360053	-147.98532483	158.46800534
##	[2601]	104.13479610	-156.94719835	3.53626618	136.39122774	-165.86199584
##	[2606]	-163.84436646	304.31749337	-32.06359621	19.92031337	215.09934218
##	[2611]	-54.07338541	30.18893936	291.09963614	37.43270703	290.03133126
##	[2616]	-263.95201334	-64.47099782	289.68776230	253.19415117	160.33209049
##	[2621]	99.06417088	87.53946415	158.09378890	370.10654498	87.31582962
##	[2626]	372.40245737	-152.35806774	178.16606729	471.41649103	242.81659662
##	[2631]	-78.30657274	381.82233691	5.35030929	184.55608002	338.41531174
##	[2636]	30.76873648	130.79254428	-49.80361483	294.83814365	184.41448464
##	[2641]	229.62316314	33.30739817	45.61547878	111.96914452	104.61563213
##	[2646]	104.50288807	74.23464907	225.70672615	89.70778851	56.64361805
##	[2651]	-84.45406015	356.38848699	-170.28775236	120.79257339	102.82817443
##	[2656]	220.38938620	23.32413425	96.40209738	352.66985839	49.19069861
##	[2661]	-138.28548230	398.22996750	230.61232406	70.13575868	7.43182696
##	[2666]	-239.14280481	311.66941660	76.33908748	-179.81793471	200.27431873
##	[2671]	244.59182826	167.41129215	218.82124769	153.07441696	338.94526920
##	[2676]	219.63295226	287.54752815	88.99016029	65.10808203	317.89056766
##	[2681]	190.85162130	129.08987521	223.84809862	67.93021224	383.69295776
##	[2686]	-51.02072115	180.10425502	201.18694673	296.33153857	306.34182074
##	[2691]	136.44185755	-23.03760822	223.05848661	299.74201471	211.95166844
##	[2696]	35.43874211	168.99120437	-97.77793175	161.47450960	149.01463146
##	[2701]	278.09582836	54.70723874	-231.31445168	206.89355864	4.04121708
##	[2706]	234.12815608	33.74413521	-10.73909822	120.40191283	-100.89231660
##	[2711]	50.08784881	146.02013192	39.41046611	208.10698131	133.10938375
##	[2716]	69.32917317	335.66349735	86.42873578	123.59612352	231.91160607

##	[2721]	341.13700955	-104.58428922	-16.22606344	12.93502436	208.84628890
##	[2726]	141.32443012	341.86732675	-31.38507103	143.56572956	209.79928177
##	[2731]	-165.47994937	57.56099158	452.27694265	117.40710799	91.87490932
##	[2736]	318.17036382	289.61192301	285.20920002	188.18175817	112.03673971
##	[2741]	257.43935988	223.14562782	249.99154585	370.63548462	80.46886453
##	[2746]	-112.40977471	-191.18468435	396.46717197	109.58339932	18.93939123
##	[2751]	-17.10898955	11.09201753	137.63060953	78.99823111	-4.05555215
##	[2756]	126.10107382	260.26688759	-92.26084654	557.82043278	147.51282185
##	[2761]	299.17796084	163.33736147	319.79838301	333.12101396	475.50911634
##	[2766]	25.06335282	500.74696603	160.32656613	103.26329171	-315.34117780
##	[2771]	-157.40390785	114.10273364	244.15082023	68.39134137	108.10939557
##	[2776]	-2.05318989	446.05648064	-12.21491363	235.49293169	189.17141051
##	[2781]	172.20083786	222.07188936	90.69021657	203.78961214	390.19014758
##	[2786]	118.97479342	361.63718278	86.11233303	138.74777634	165.51525475
##	[2791]	96.77282250	110.56013530	209.21580684	-141.43318538	452.23745221
##	[2796]	131.52559947	218.26326524	221.96771162	292.62701617	-64.46368839
##	[2801]	173.35456939	256.95288507	240.16790587	176.15410132	-16.13819523
##	[2806]	114.86436253	-225.80463149	159.66791914	241.28394109	75.74909404
##	[2811]	390.72589663	50.01158142	156.60996985	354.23307645	176.02740988
##	[2816]	-191.41411819	163.12230170	184.77705866	91.07033225	193.98311875
##	[2821]	329.36097994	177.06497354	7.52830258	384.37013516	476.66337266
##	[2826]	304.23452443	246.92878624	123.13584131	-39.97132946	182.69483435
##	[2831]	-37.13427109	260.10263560	312.47733395	295.11922481	266.96153919
##	[2836]	185.03322112	256.56659413	418.29631711	167.81046429	444.73686984
##	[2841]	119.52139888	436.17540188	185.15624573	277.84464604	89.03147027
##	[2846]	1.80696160	93.01262857	216.04202949	75.24656260	380.10161948
##	[2851]	329.11792498	257.13859536	91.26059491	214.27897280	127.91210207
##	[2856]	424.95897702	48.67307121	193.57071506	57.39078223	238.10102853
##	[2861]	627.19056695	200.65266271	190.83748060	229.66265947	144.84492263
##	[2866]	413.38140422	145.47828905	136.75791721	232.96812270	170.16677405
##	[2871]	98.25052169	2.30131037	336.91844674	245.74533498	43.22135499
##	[2876]	238.21017543	44.61860836	255.91522906	104.58876200	115.30200272
##	[2881]	212.08290527	12.96599786	337.83728743	231.43520866	90.29406634
##	[2886]	467.57861256	3.16538350	458.86436523	280.76385345	71.82402794
##	[2891]	153.79955968	66.47535223	366.28282993	208.16854211	248.61997277
##	[2896]	490.18030692	-217.72276318	49.07031450	263.53474581	-21.87801751
##	[2901]	470.69186938	251.10646850	400.20415142	218.26523782	-11.20750141
##	[2906]	233.46903074	-36.76974926	382.55902582	370.53141682	419.46882667
##	[2911]	246.01397824	261.36547323	-39.92580693	202.31548272	345.54856947
##	[2916]	-68.03772713	238.11591073	-141.36696075	403.61674613	43.31335783
##	[2921]	247.77982807	34.58523794	158.65102655	-103.10697317	-255.16468217
##	[2926]	310.06441781	235.01916825	345.39867464	320.99631619	105.47960647
##	[2931]	64.50013502	300.95009623	330.20653276	239.75640836	173.70161120
##	[2936]	66.50250623	304.62544509	290.58155609	240.34329847	571.60478375
##	[2941]	-47.32688907	79.51873397	198.93668486	-29.27713340	58.86674516
##	[2946]	-51.78629532	431.11056328	64.86396540	226.99021084	489.78759732
##	[2951]	242.29510883	52.57609810	271.32576708	164.65482045	81.66213472
##	[2956]	-136.51338389	480.80664146	51.42753257	147.77642410	133.76008203
##	[2961]	61.09449468	349.97064365	201.76173903	-44.88194052	183.44231490
##	[2966]	642.31219090	183.69116358	262.72971761	334.53331931	69.98297431
##	[2971]	330.32547715	474.00574376	199.40545273	352.95936924	122.65777545
##	[2976]	294.75786552	-90.14238829	16.58723512	228.18112615	253.54879125
##	[2981]	390.98312716	226.93223025	395.53888808	438.85348341	390.33819803
##	[2986]	347.15520855	281.49947368	-141.22581814	135.11584796	31.54770492

##	[2991]	462.80071636	216.32201020	111.59472192	71.62562651	87.93931918
##	[2996]	309.17024286	41.78519590	420.64484755	-64.09019923	168.70148178
##	[3001]	-209.96378028	209.28311305	-74.05574876	47.30114683	-154.25917942
##	[3006]	262.98237153	103.33553141	194.56449056	30.67159806	-27.46140970
##	[3011]	-77.73135862	35.50440655	115.46560674	-237.36582289	-14.87709153
##	[3016]	-83.45006840	87.33086319	-129.87110446	114.77958883	422.79466290
##	[3021]	105.53774169	244.20230363	154.47574417	130.83928428	-118.78782285
##	[3026]	364.37305034	460.27200852	313.97750015	63.67388746	191.03175924
##	[3031]	-71.46856222	200.84055146	72.22514161	-31.22323134	126.59751647
##	[3036]	271.19752768	365.17348149	133.55318372	381.02169768	339.20267364
##	[3041]	88.79151990	-56.77635876	-36.08601967	340.15357575	260.10333878
##	[3046]	50.28037641	-120.99107903	24.88055770	221.06667753	183.96433085
##	[3051]	13.53670512	233.04152147	1.83694601	242.13713017	20.10115923
##	[3056]	134.98851854	414.53997020	101.20033977	58.83233293	354.31552930
##	[3061]	-38.37332771	181.14036152	529.06969819	295.38630902	41.97886275
##	[3066]	259.88925687	349.15606991	120.42085545	202.90811689	-21.24323646
##	[3071]	328.09084090	355.48662262	-71.64578457	-38.77419767	105.71866751
##	[3076]	3.80156532	52.09564244	-51.71574277	21.86187847	416.23847062
##	[3081]	-163.39336436	-209.82893234	216.48817068	252.55912190	-42.54511339
##	[3086]	365.09742035	106.37057874	-135.22275360	46.96897193	-90.90674134
##	[3091]	-116.30969078	187.32123607	282.53993945	-56.86527149	163.57450312
##	[3096]	139.74862116	390.84475457	-6.28258792	-17.07879832	-59.93226176
##	[3101]	250.83535881	233.45012644	55.52867263	56.42576356	-21.79670713
##	[3106]	203.48299769	409.87636388	87.96023940	312.79407326	97.47290009
##	[3111]	239.02082996	429.10412031	86.55501588	343.45004856	-44.94653474
##	[3116]	260.96944897	56.57682749	127.84216273	156.46235481	201.16375361
##	[3121]	305.26940799	50.84603513	239.52762630	365.29652765	171.84652639
##	[3126]	-133.75932454	-105.70969488	-51.86477760	214.63394111	-169.23774543
##	[3131]	291.19435745	203.34956519	351.81571811	255.32965695	148.54618784
##	[3136]	41.19439467	145.62547415	-187.22504739	385.21579054	240.11182618
##	[3141]	387.86666120	449.08119893	-8.67842318	322.08010615	418.94901647
##	[3146]	116.54400734	91.12826402	375.81399118	280.18862346	171.93021933
##	[3151]	107.88945085	84.90696083	-4.54130824	271.24216277	139.08480418
##	[3156]	1.16781867	321.09434709	130.94955021	28.18870042	135.48694333
##	[3161]	318.38991200	213.28838534	53.64348311	241.27233907	255.42532971
##	[3166]	191.48601444	281.10735894	213.76404336	142.52928747	20.61976783
##	[3171]	109.53390143	176.51090202	-15.16975940	414.43302252	237.27514304
##	[3176]	-189.08174227	52.24332229	87.71196488	163.65529485	297.35675079
##	[3181]	-280.83905871	165.61268669	212.56348362	62.15107022	92.56937621
##	[3186]	458.16982360	21.95147932	91.31595461	38.07368412	-145.88228781
##	[3191]	-219.82429984	-32.34320004	521.73518320	86.49509140	131.32897893
##	[3196]	261.57539683	309.55376922	227.95460504	-40.30303342	141.28769816
##	[3201]	456.76522181	196.45332156	432.77441467	164.67215046	44.02440023
##	[3206]	175.51247642	168.46512854	214.86213573	459.92076798	-61.75831994
##	[3211]	391.87834965	142.39180618	342.02628803	241.12913810	18.63397384
##	[3216]	68.21516032	243.42863718	420.42998746	15.86373779	318.47322889
##	[3221]	281.74596892	258.91673651	277.33741793	197.65184342	345.26714744
##	[3226]	254.37188230	300.04400374	-37.68717298	74.56075282	-2.99425673
##	[3231]	277.20612463	146.37306894	405.92709300	60.11510188	206.11303308
##	[3236]	95.88510874	254.01557169	201.41947389	26.23178575	296.72955268
##	[3241]	33.99489519	289.49524803	316.93412218	340.97628317	190.57369229
##	[3246]	336.70720974	88.93365128	189.06907992	334.06373521	122.83656952
##	[3251]	306.95223448	455.03405364	119.88593233	166.15606348	311.45183817
##	[3256]	94.91974851	156.07041159	188.71395517	275.17940772	163.59277179

##	[3261]	141.60757260	-122.26016401	73.92991795	318.55830353	201.86878679
##	[3266]	192.45536629	147.69450207	-221.84674916	72.49936127	78.61151351
##	[3271]	190.69701681	386.23281945	-139.04312004	257.78957512	36.73496265
##	[3276]	77.04010864	296.24535799	176.83718897	75.92937713	-36.57885348
##	[3281]	297.41678073	20.23251217	132.62571257	157.66865862	307.98439568
##	[3286]	50.49352079	61.04532983	362.87037848	-51.66073506	398.12495646
##	[3291]	8.10596206	287.38666153	103.55173886	167.75467798	209.98710282
##	[3296]	373.33352498	214.42172365	241.65607424	328.24979600	240.49454818
##	[3301]	361.72242333	146.98913682	-31.60927417	199.75437129	424.11677405
##	[3306]	226.14045403	138.02373876	266.56552194	40.68804946	-48.40466956
##	[3311]	282.03929456	223.25579305	102.91075256	61.54309204	253.86743592
##	[3316]	118.02865863	-29.19373239	-62.50212124	264.86587336	-62.21916486
##	[3321]	135.63128491	350.39301453	-14.76680682	445.42159051	197.53163178
##	[3326]	133.68443800	194.23197079	143.08010717	262.69449858	148.13769499
##	[3331]	349.47768675	159.64176434	16.08918500	226.90226279	378.10008133
##	[3336]	254.35585204	362.04814363	33.17923731	177.76903784	247.34556265
##	[3341]	292.13189652	266.91219029	198.85994427	55.09559708	146.29787722
##	[3346]	185.53332231	289.67002366	-159.05119370	-22.27337881	279.73486670
##	[3351]	67.86500530	-11.13134544	-24.02349730	-3.99077259	2.00298757
##	[3356]	-61.90721864	168.30311255	84.52673409	-23.93783064	99.12352455
##	[3361]	205.50137768	-31.56027094	43.88987903	75.74431077	38.11910725
##	[3366]	-37.04771816	236.14239645	322.76045177	-36.35342766	68.32387065
##	[3371]	68.46998918	231.39801423	124.80163911	112.10610020	-183.69940105
##	[3376]	70.73803418	-52.30085335	205.86628766	153.54498928	64.24677520
##	[3381]	287.15474185	-265.28229009	90.50954618	265.94843720	146.60596022
##	[3386]	232.16505413	307.63071581	273.36724017	252.73945226	260.70126218
##	[3391]	-161.03532675	173.70272623	205.45713129	148.94247987	-136.64271236
##	[3396]	5.34147936	28.44351687	315.80710335	128.37436268	286.63944188
##	[3401]	190.23827540	15.15043546	115.73204550	206.89472726	10.48581524
##	[3406]	234.06541253	331.61051228	392.38114241	480.19587076	30.50526908
##	[3411]	64.30783965	56.57319376	30.86116984	256.72463269	-136.03651460
##	[3416]	385.03642978	-72.80201932	-55.34512668	174.52360199	39.99076345
##	[3421]	35.20737329	241.93971524	140.05076915	312.36877204	192.83919047
##	[3426]	148.51157343	311.46425702	507.69695236	58.93476717	155.94720814
##	[3431]	288.49892638	152.39971198	242.09563855	456.51002734	394.97446725
##	[3436]	140.48250325	268.52230180	257.83444452	134.77811525	-24.21052384
##	[3441]	93.11495641	218.36831057	276.44658001	93.56302367	124.31439192
##	[3446]	81.09287782	-120.72786930	18.77084447	189.21795999	113.81683906
##	[3451]	95.01650028	81.06824063	-17.88653968	302.22073389	205.73427325
##	[3456]	-65.54674627	13.45465499	197.70636163	42.47282028	76.19071083
##	[3461]	160.12151680	238.40320151	193.38275618	330.02896469	98.74284545
##	[3466]	-29.41471227	215.55584797	119.68604707	81.18717280	134.55554753
##	[3471]	601.12590866	-168.39144733	168.90518657	104.09528766	54.38180362
##	[3476]	150.13376882	43.13988753	-96.70109326	-74.12844559	166.58679576
##	[3481]	411.57984012	109.19795496	278.32001889	226.11619392	111.23898873
##	[3486]	426.85530176	337.19251384	102.68037321	310.45148414	192.84444558
##	[3491]	-19.19872744	-2.53106031	361.28843560	-0.19707694	94.74818857
##	[3496]	59.97529259	116.08720780	130.58420088	110.57148531	168.79130949
##	[3501]	19.70861805	211.81798601	162.11990789	171.82379360	102.63486325
##	[3506]	260.84517034	-80.29300906	160.49130487	288.73120120	297.64283391
##	[3511]	238.94511040	181.96586888	13.00218315	-42.26531566	210.90730606
##	[3516]	358.76124529	357.00450358	-46.53000926	138.95265944	-77.46779996
##	[3521]	117.04106380	182.71941461	270.14725366	116.00550462	106.93619627
##	[3526]	260.26381815	-102.68411730	68.93716485	-44.15467137	549.96134249

##	[3531]	164.41783941	11.17123526	412.06943391	326.33309079	238.90121791
##	[3536]	288.42474698	231.72946819	463.40090679	182.85369861	637.33058601
##	[3541]	285.98374626	177.58982426	141.52336321	238.86178126	-236.10669547
##	[3546]	244.59536768	-97.27055769	4.65094615	33.17565624	442.53551329
##	[3551]	-92.10769701	495.44853644	79.39728905	388.38613107	217.39854959
##	[3556]	42.16355036	319.38391433	446.10462997	174.36324519	141.69138578
##	[3561]	323.41515964	107.76803746	10.86761251	234.21565079	149.95922356
##	[3566]	120.91994066	278.88544014	302.49428909	-219.17483785	275.33018501
##	[3571]	361.18435410	99.11620896	250.21352438	229.84893723	178.95991755
##	[3576]	181.03708526	256.43554866	385.96910525	285.92225900	215.43991018
##	[3581]	382.02840788	232.89765829	173.33975879	254.94053603	63.98898816
##	[3586]	260.39016684	326.02072623	154.37749896	223.05950138	37.93414308
##	[3591]	60.50463278	38.91901594	9.21064345	126.02266596	35.84803224
##	[3596]	175.59219030	128.21238554	107.61134575	254.73193090	423.83220563
##	[3601]	-125.24910969	15.49803986	62.56971541	-55.00800382	314.68780145
##	[3606]	323.82633849	263.25749781	91.29991376	264.28699539	49.72617786
##	[3611]	215.62841185	176.05046718	393.85873676	89.11918492	365.17704075
##	[3616]	170.21501034	-73.56159060	-71.92715537	144.34658304	-39.81854018
##	[3621]	142.32820006	46.93325188	316.18175474	206.92813646	388.67931258
##	[3626]	83.13476888	230.92718270	-131.81769624	294.20757170	12.17100268
##	[3631]	82.00423761	265.86307043	61.24936048	644.95081263	0.94854901
##	[3636]	233.20182294	-79.64852340	-212.26905762	472.52957852	289.90953779
##	[3641]	63.03946732	395.83319387	1.01696247	-162.25959947	-8.82402329
##	[3646]	327.09153017	-71.07499451	248.70259749	63.65301786	276.09434880
##	[3651]	194.89051667	93.87374116	-217.79617538	442.47168620	149.14228973
##	[3656]	317.12188773	-128.30852196	181.50423050	205.48613724	369.04177867
##	[3661]	-297.39326474	265.31925566	143.66984343	-204.09793124	57.07191294
##	[3666]	110.92336804	237.95494912	66.38881188	313.34082092	-35.18716855
##	[3671]	515.32376791	214.52112091	223.16132171	353.65588331	-12.92754044
##	[3676]	298.59767190	-0.28443407	318.32045130	162.86459350	137.46309187
##	[3681]	114.50989720	206.96940352	165.80610208	318.93554761	390.92827664
##	[3686]	77.22021710	128.86001181	176.03005656	182.50300211	240.33826450
##	[3691]	-58.34832397	-40.18254709	401.01044766	69.76969544	-5.36124102
##	[3696]	304.46808626	190.56211435	-50.83490710	-88.54773443	-135.11351556
##	[3701]	286.09039060	127.34155673	152.79358726	172.33311500	-120.52198301
##	[3706]	173.85885941	213.88757029	144.56946934	287.86755606	13.02444080
##	[3711]	3.22710063	126.65535758	187.95144552	-187.13043185	167.34867162
##	[3716]	357.46052989	-28.52044452	122.24879481	99.08015274	12.12495228
##	[3721]	217.29235857	246.54137686	8.63516654	180.61440771	-84.40202637
##	[3726]	76.46588496	60.48986166	-13.30010906	254.03647398	353.68053133
##	[3731]	115.16534910	331.78110176	286.32618581	128.66404066	213.30748322
##	[3736]	247.87278386	15.82419864	181.15097058	319.94981772	396.09095256
##	[3741]	-91.49972949	48.42755289	-23.70504049	133.06793324	-55.14059309
##	[3746]	61.57687903	188.53578619	473.30930876	269.90934962	-80.32448685
##	[3751]	76.59865761	160.68922540	154.55035939	493.68933073	95.01423455
##	[3756]	350.92194698	250.73354747	-43.76452072	8.87216492	171.11790150
##	[3761]	502.96199449	76.55299877	220.48276237	-127.59610830	159.82371591
##	[3766]	102.56883719	43.86816656	-135.37365940	128.52634524	-26.58699815
##	[3771]	40.88715091	160.72002187	131.53855188	-18.58628368	425.33004448
##	[3776]	241.71000363	-72.93269041	70.61396780	58.91691669	102.40678968
##	[3781]	108.01688353	218.53734291	83.96544843	36.50917781	250.52919688
##	[3786]	-26.94181736	-33.99184498	143.64128143	121.11366829	105.21659878
##	[3791]	126.96148556	179.45559537	467.96031885	200.76546097	84.79626169
##	[3796]	-113.87343421	-20.30621542	346.19958526	75.34149539	13.81578851

##	[3801]	38.85615163	-36.82586318	221.94065793	574.69051745	-227.51709806
##	[3806]	349.99999811	105.16996419	217.45804452	20.61819749	496.38116213
##	[3811]	220.18502664	32.86573183	359.51410002	183.64152032	129.54944533
##	[3816]	-124.85239920	231.52995957	222.07403354	309.87963677	28.43814635
##	[3821]	278.42222603	-72.92975240	195.57935294	129.14701583	416.53013853
##	[3826]	25.35837952	787.42561054	276.96442355	375.16820670	56.37970327
##	[3831]	81.17895192	106.77486691	470.74204881	77.43638488	-216.57018719
##	[3836]	84.15361233	1.61239825	429.44488846	326.49808285	146.62554650
##	[3841]	206.00689357	-243.39779199	73.27003965	255.31144775	82.05889595
##	[3846]	271.91336027	108.33745646	168.46715075	-103.69257985	15.37439370
##	[3851]	282.29904124	300.55895500	252.42502869	107.27052203	280.80934387
##	[3856]	387.43467545	128.92683251	179.86200019	60.16488657	198.47772567
##	[3861]	31.87989990	137.73586522	198.99034403	-58.76447232	65.99126651
##	[3866]	502.61411157	-20.68515368	389.65969484	98.83446550	173.15750025
##	[3871]	-92.78024932	374.04524211	114.48764030	435.94331797	460.92511914
##	[3876]	139.49699855	-184.86194541	326.70905652	357.95574809	517.14830457
##	[3881]	540.23122961	260.81020847	269.46811893	572.99263552	48.13895124
##	[3886]	229.12044991	60.80474104	225.59952052	-173.65414741	285.20620864
##	[3891]	272.93895213	286.21308556	530.19847183	282.38550581	238.26129225
##	[3896]	281.96478421	225.00232659	333.68698307	201.34894807	158.96185647
##	[3901]	274.94287636	-162.66058132	61.91910955	267.74902511	441.30727710
##	[3906]	-79.29025220	356.21266610	311.45486012	393.77405049	298.30959878
##	[3911]	-30.78022810	263.07027131	154.69437072	110.98387179	30.52988914
##	[3916]	317.41609703	140.14351252	174.28419942	-48.05401280	107.05308910
##	[3921]	513.17952277	-200.52546156	478.93273186	53.99588675	209.10001517
##	[3926]	16.42960277	155.00580257	-24.15217149	36.78358851	-154.63627508
##	[3931]	449.85273230	287.64138327	59.35375979	120.51030605	274.55478433
##	[3936]	-142.42713415	264.40739738	222.71176661	337.08600698	18.16385636
##	[3941]	191.13264759	260.78635841	348.61289568	88.66500460	380.70074291
##	[3946]	351.52444084	196.72779140	-115.08368866	-83.20964934	13.08821894
##	[3951]	219.61302387	254.00385798	173.71413949	334.71082781	274.30533592
##	[3956]	328.62430756	292.35240670	101.39373447	206.25125271	81.40969421
##	[3961]	-8.54295219	317.16072632	25.72565105	245.30711843	210.17659144
##	[3966]	21.47801219	272.24614038	152.94841532	167.81559549	50.64069565
##	[3971]	138.69616627	223.47804278	244.07505711	51.92119823	42.06760486
##	[3976]	331.74140784	105.37830187	184.20592070	48.94618183	13.78760800
##	[3981]	229.05971724	85.42995257	171.54354009	318.95205833	232.73203199
##	[3986]	119.11818024	87.24821706	320.65407631	409.88003158	223.33198105
##	[3991]	-143.74140257	438.85469850	-15.15905198	188.11992384	489.91297550
##	[3996]	159.54696968	279.53388064	-85.44235318	244.88981589	139.76694681
##	[4001]	-221.15926330	199.77980791	-68.61040212	135.59251994	305.61987853
##	[4006]	346.07555524	148.15122316	138.47686005	71.77980767	50.41230879
##	[4011]	19.21805152	18.38820113	-119.32386107	101.52588741	157.10684991
##	[4016]	255.17495497	174.01005163	322.95369856	-109.80343522	222.70157427
##	[4021]	102.91606455	60.78041655	172.29983085	109.23708045	161.80383381
##	[4026]	191.40129113	91.59328941	7.74149971	245.68568440	255.23387588
##	[4031]	210.77009050	242.30732513	200.02086414	-10.69006116	233.08098491
##	[4036]	417.04179883	181.84201541	4.48091860	-12.50945545	26.87726487
##	[4041]	286.17670454	90.44047538	82.20115646	297.28129494	120.39524497
##	[4046]	269.65750842	26.54912406	81.95257809	457.40066012	-46.95118030
##	[4051]	305.21380453	136.74263696	235.28617623	435.90321312	196.86121937
##	[4056]	116.63358707	28.84781449	84.07970644	184.12134391	143.95216277
##	[4061]	-57.40262800	246.92363839	161.33973796	158.02064017	367.32416206
##	[4066]	78.21293239	281.49528422	275.85979122	307.20664255	301.03761883

##	[4071]	79.11576139	194.77800616	195.64409900	324.08968560	123.84515681
##	[4076]	27.11748275	311.88134325	254.86068206	193.32595016	47.54910278
##	[4081]	248.14609403	47.54768176	360.86041851	380.24067736	308.28140118
##	[4086]	216.88844937	170.27087717	59.86624137	56.44008663	145.78319309
##	[4091]	444.74621208	376.38286938	403.73450564	183.69906698	135.93123608
##	[4096]	133.89035777	84.55269048	364.08875940	94.26089075	175.62831689
##	[4101]	225.12866642	224.55593254	206.96419878	47.78635524	165.58130692
##	[4106]	-0.16845634	105.92841987	446.61125798	123.27269042	19.23712617
##	[4111]	134.19107862	-10.12202434	313.52980937	207.30418765	-12.43496559
##	[4116]	196.55033077	123.34303840	241.33585296	199.58793942	-147.83718387
##	[4121]	-136.64435171	190.73537083	236.65817196	-145.90087163	16.15760768
##	[4126]	86.43411181	340.62237225	468.41938363	-215.70489526	114.65593108
##	[4131]	404.48000955	208.87369311	167.34159207	352.82006756	179.05950642
##	[4136]	223.69415745	-61.86232174	209.46741419	392.07161899	400.78607644
##	[4141]	104.95492237	54.68112665	205.99345005	225.99194847	180.76179329
##	[4146]	227.21984339	198.54848052	165.63755076	267.64247382	258.72564349
##	[4151]	254.30403877	155.46261908	240.91918007	102.28216018	150.49633549
##	[4156]	185.34848873	232.84299514	261.13906014	296.77901789	96.78178508
##	[4161]	29.18463221	154.92352262	220.10901307	13.55414003	361.63789370
##	[4166]	-3.11189978	255.69127595	-92.58566511	-15.31364253	436.05835437
##	[4171]	107.64134302	89.95088212	14.24598427	184.83311896	90.64813069
##	[4176]	252.63940383	29.91042843	59.93726859	-108.80206015	-124.72016260
##	[4181]	26.76038071	269.84855049	302.92509140	171.14970915	132.92415848
##	[4186]	414.70816608	87.80207611	309.90207653	176.12673717	233.47066489
##	[4191]	214.41065981	427.90301443	249.64827518	251.95092826	248.28445523
##	[4196]	132.02535866	17.46866759	59.73598200	58.99200598	109.57481128
##	[4201]	232.02037924	205.27694685	244.49571433	211.06773738	-113.37840909
##	[4206]	117.71415050	141.58218390	267.48814516	244.24084927	23.38136835
##	[4211]	-29.56024381	109.14092289	368.37126646	174.80527325	102.24353729
##	[4216]	536.24892446	9.16967525	198.23573422	149.42604342	25.40605485
##	[4221]	73.31607195	350.65217703	229.12479258	345.22542832	168.74984802
##	[4226]	445.30969396	105.32708672	197.09459050	265.73680061	32.35425190
##	[4231]	32.48680078	434.96558227	347.36540782	455.37145539	295.88962194
##	[4236]	167.12210687	184.04513917	104.90125709	100.00476544	241.99343768
##	[4241]	52.06444871	175.84027429	526.75059646	-32.87224086	237.92319004
##	[4246]	145.32777330	345.30381414	67.67999182	-10.86235115	40.14052145
##	[4251]	273.71574090	432.50990585	83.90743576	88.45843985	138.42339309
##	[4256]	129.52218062	-50.49278896	215.85628117	118.20314235	-70.18115185
##	[4261]	328.40985225	173.77560199	112.12537123	399.45443137	219.05698034
##	[4266]	-45.43833904	290.85369715	238.11135504	322.33289252	-180.77357573
##	[4271]	28.36297495	9.76128261	182.93661222	199.19260232	29.58367739
##	[4276]	126.43077229	220.70451656	165.25203124	245.10330538	287.62924048
##	[4281]	153.09679543	142.10563524	99.91236283	75.48611949	281.53625607
##	[4286]	155.71586094	126.80636915	97.89975502	474.92609278	-109.08393676
##	[4291]	114.44511938	35.02513182	260.33869884	144.34225952	-9.90876299
##	[4296]	243.11421603	54.23032685	163.29478669	405.71078945	35.94224262
##	[4301]	17.62711368	125.59108774	384.51608805	186.53163977	-123.51958442
##	[4306]	-22.57822159	451.91771730	-25.55501293	-107.46727609	-49.04730436
##	[4311]	68.54560201	148.03863488	130.26227269	153.25101064	269.64813876
##	[4316]	93.57398690	197.00431479	303.89601706	48.76521913	110.77348534
##	[4321]	319.77630249	-130.23974756	197.89782169	286.65547574	316.96173134
##	[4326]	155.43037744	83.57221400	181.73670986	132.17338031	113.63040621
##	[4331]	450.19032168	110.27292403	-65.11214046	-110.89377086	-25.08890693
##	[4336]	-111.96808077	98.55275268	111.97277481	363.39481780	145.45617768

##	[4341]	189.61630655	208.80477225	345.19885351	248.10781397	348.51112076
##	[4346]	25.22986203	580.28896504	231.08500095	237.19729123	152.52391099
##	[4351]	151.46896867	22.36370157	347.36981508	-35.00244201	-91.59669819
##	[4356]	327.45311543	418.45456333	245.16922015	433.74995825	177.71838964
##	[4361]	165.28877992	54.50623613	56.78426682	7.43212978	587.43617639
##	[4366]	270.79500098	104.19324590	139.94895513	270.02332570	251.53772708
##	[4371]	289.43087445	-134.02409431	-41.72975912	315.00059664	-26.59820855
##	[4376]	-102.36362375	343.00153537	280.94818784	125.92080823	106.95669509
##	[4381]	-120.42795059	198.33506548	189.26206965	135.78330614	180.65003009
##	[4386]	152.78133418	407.74841134	26.60458743	50.87311896	44.03335373
##	[4391]	102.14817485	96.29123667	415.49427454	-88.81889348	86.56813346
##	[4396]	-242.54274124	329.96046621	177.44168311	65.39851533	217.37155853
##	[4401]	54.97610342	177.86650167	-8.64668000	361.09608471	105.93532482
##	[4406]	133.31754080	247.97102656	-41.89555336	-15.25548858	476.31970663
##	[4411]	296.98938417	-15.87389371	111.41045166	275.86576932	73.80339161
##	[4416]	180.76530660	140.94653252	255.68955270	465.26834529	154.08592450
##	[4421]	504.61297988	-221.53336413	167.16933802	53.49295723	-292.39613482
##	[4426]	169.86055746	239.56701966	209.73224388	304.35657162	195.81768254
##	[4431]	79.46677083	235.79805884	-31.91127660	48.15366350	-7.83043769
##	[4436]	149.27880702	250.51655110	-248.70189767	61.22460883	61.74338901
##	[4441]	-241.06511179	274.87825151	233.91441746	257.83979042	224.38651055
##	[4446]	185.29834524	92.03008103	445.11597455	6.59985347	81.31171159
##	[4451]	356.11104470	323.86378993	213.61875542	230.85173371	-50.78884106
##	[4456]	248.39055789	191.14510411	103.23362080	96.81932085	287.89505186
##	[4461]	14.44322924	198.29950528	-49.73706433	-208.33346147	221.73747975
##	[4466]	251.82979491	136.15074465	287.02726255	214.75572218	175.64732182
##	[4471]	92.46531150	55.60377524	302.71226669	-80.28064101	71.13277081
##	[4476]	-111.31519189	145.76128170	273.42055321	217.94898293	34.21053499
##	[4481]	214.71411328	273.73630086	116.11771661	291.30645427	105.44410362
##	[4486]	30.10306476	211.70947075	-44.37577733	53.91506109	-47.10995485
##	[4491]	-364.79732195	182.64533737	-58.94741132	43.56021557	149.12106867
##	[4496]	242.22474483	288.49948942	182.36697844	113.60844641	97.23098513
##	[4501]	142.92551915	61.27960458	195.89648108	123.61935020	362.87174305
##	[4506]	10.36667290	-114.50539469	507.18209098	-40.18767705	183.22475383
##	[4511]	69.04317281	406.53573475	352.96011617	18.66493923	-45.49941022
##	[4516]	-51.44002375	331.65583705	-120.58471831	344.16395769	107.21336494
##	[4521]	51.24553293	181.40472399	-122.77488218	20.86503353	171.15937318
##	[4526]	97.91218895	212.79323804	328.68344201	339.42566063	114.48887091
##	[4531]	280.24433926	182.54190377	249.79121687	211.88934396	62.69658405
##	[4536]	325.93797310	-31.29913445	58.17561855	196.40841090	354.00293295
##	[4541]	163.81313723	111.37345471	-74.36928637	237.80377835	219.65371760
##	[4546]	48.88776766	-136.62771414	49.56253950	-197.37457572	353.89944368
##	[4551]	-113.81199611	86.27822671	382.41131025	327.73854331	109.44817196
##	[4556]	96.22124358	250.25285422	454.41225593	285.24504388	140.74809378
##	[4561]	-29.37833856	299.99858516	367.40609741	146.72558311	-10.37188916
##	[4566]	-52.96633875	-152.83139882	30.36094206	50.25438888	85.67349738
##	[4571]	20.14410213	14.64280554	9.75762673	341.68370090	211.69369342
##	[4576]	-50.79934790	316.92791747	184.62940758	223.75119901	189.45835203
##	[4581]	275.91766494	109.23097887	124.19637303	304.76100165	403.92676572
##	[4586]	158.60485417	133.38487563	262.04875453	368.19009098	360.16525651
##	[4591]	151.15591635	-78.31527963	631.33032761	259.09669661	197.57840671
##	[4596]	290.37647796	270.85346050	427.63839608	-0.72305500	94.89768849
##	[4601]	-8.24449291	-225.40997544	113.96239811	88.00155314	395.21915896
##	[4606]	372.95691532	158.71368554	125.87403086	438.96646003	289.07956850

##	[4611]	391.37399521	169.64024468	125.04818996	130.13650287	282.88864992
##	[4616]	447.64875819	189.79223589	-28.94619235	408.34103074	121.88107953
##	[4621]	60.63117575	-88.94368423	245.98008839	-40.61684876	222.31994840
##	[4626]	80.10184497	108.37975039	60.20171609	182.56534386	194.20076192
##	[4631]	335.33357811	360.93636971	-175.16919129	161.04466172	299.64128530
##	[4636]	29.56183685	45.33052634	13.16105825	186.94807288	-11.02762809
##	[4641]	-95.29236694	287.99472423	38.71261657	-176.06230076	162.34310984
##	[4646]	-54.24144693	195.31940666	367.31359402	-7.01225789	250.29892741
##	[4651]	417.05943288	392.76181342	370.30213880	199.87778662	50.65185360
##	[4656]	81.27585032	7.64965187	164.19729293	262.50288621	144.38870608
##	[4661]	232.01308750	144.86096198	44.49066230	333.12546016	201.83812999
##	[4666]	158.11585204	340.54697804	147.91727698	-31.33307159	403.98410080
##	[4671]	96.72841998	-155.94443323	165.62455904	12.99390036	275.55875104
##	[4676]	152.83674914	115.49772114	87.07974380	223.07297940	67.47098042
##	[4681]	285.37002073	51.13787291	1.77332854	75.08652686	137.82915200
##	[4686]	-194.95507220	-2.06617024	280.24276444	-108.48702219	175.11070187
##	[4691]	106.15202127	393.62996347	158.81409673	449.09766592	93.96697340
##	[4696]	322.84620414	3.44544630	306.32024411	44.35195488	175.73338321
##	[4701]	193.72264874	161.13409423	186.58092507	137.95479074	230.58698408
##	[4706]	20.13792399	495.94617279	74.59287107	5.15611715	-92.47809701
##	[4711]	397.16955347	26.14277893	-222.80640584	238.75322838	-65.01206771
##	[4716]	147.52768839	74.07412874	11.01566694	106.53588155	126.18648359
##	[4721]	38.22120151	-244.74931560	351.62361561	240.33986699	96.95394500
##	[4726]	358.98996926	82.63269383	-63.31944196	141.05911428	227.64007208
##	[4731]	253.83072046	270.34108761	88.02314295	123.95910332	294.75918347
##	[4736]	14.12501805	353.41495282	191.55363546	281.30220075	212.48822512
##	[4741]	-40.50367153	105.07175613	174.54664610	354.80467416	334.17875035
##	[4746]	-109.53933786	171.90884523	269.11868598	209.04325860	289.38141190
##	[4751]	-96.26284202	382.15985603	251.49743775	328.90431032	302.10729133
##	[4756]	131.38345552	-271.89106268	143.49899660	-97.34583234	128.09875041
##	[4761]	344.17518915	180.26609328	134.85258296	243.52580812	143.15417552
##	[4766]	96.27050681	-81.20766987	167.10445331	-49.34549504	152.07506431
##	[4771]	373.77732589	-85.52967192	-99.79550967	322.88556898	172.61095304
##	[4776]	315.36417377	10.63226021	95.48161206	101.04237939	58.05942186
##	[4781]	500.54941023	84.90072154	35.08787585	542.63442869	92.87059948
##	[4786]	-101.21550238	138.85475784	68.43955454	-19.45570035	313.01341451
##	[4791]	55.59425015	-53.10133149	77.97761596	331.82271257	246.14683257
##	[4796]	80.71347446	244.88380313	191.19076295	-34.30001321	310.39856169
##	[4801]	168.64883175	31.79776270	-146.68787802	-27.74362639	39.79046511
##	[4806]	390.06789798	100.17019793	328.58113298	281.26762209	28.06671359
##	[4811]	182.20343227	191.38652110	189.12358920	120.82736474	227.39746808
##	[4816]	31.45928404	203.03777886	54.69526396	220.63030049	91.92390879
##	[4821]	520.25962637	161.79049937	85.29521676	279.38093870	176.44508292
##	[4826]	509.09584959	-133.79311812	-3.78806465	326.90678895	111.21905453
##	[4831]	438.14563106	479.04511573	371.68612054	115.06389204	-64.15267596
##	[4836]	226.40887889	-27.42192853	55.13876067	202.62772654	322.04243653
##	[4841]	196.24645831	280.29542462	320.49470249	457.14760925	194.83016910
##	[4846]	124.68557358	329.98779332	165.18695217	20.07053191	220.24194267
##	[4851]	153.27551392	80.69807627	196.98355061	270.86690708	747.54862157
##	[4856]	33.01579068	132.11920200	-109.45950237	11.98650405	32.04556885
##	[4861]	118.03550844	95.92629960	190.98939060	30.93403152	469.95784583
##	[4866]	-26.46513598	229.58215908	303.73422254	118.69318989	491.07881648
##	[4871]	161.70144783	69.37275694	6.60481547	-44.36161870	44.39808713
##	[4876]	297.12441540	-12.79403069	225.66872917	323.68257809	223.91464078

##	[4881]	256.48166801	320.06059259	245.83774275	245.51240707	203.15425231
##	[4886]	298.29512917	137.14480168	-83.72391823	302.22593374	245.62810620
##	[4891]	150.15756160	79.46900149	180.29910416	267.67890428	453.89388566
##	[4896]	-160.93532820	77.72310748	122.61748775	331.12442254	-24.51760888
##	[4901]	17.93297349	99.56461023	219.20770164	202.39147190	309.85928489
##	[4906]	-198.46748090	94.44586494	298.56309146	402.11582184	302.00556230
##	[4911]	19.33923340	22.88531779	-141.28279364	-85.54120577	-139.72153917
##	[4916]	56.37742136	115.22406403	442.00866307	92.45539264	64.64292769
##	[4921]	263.63031349	127.07802040	43.68273414	90.41760564	212.32270814
##	[4926]	-12.38115967	154.92161368	-104.95748394	160.06463467	303.38068991
##	[4931]	297.47672201	216.09422767	-6.47439855	262.67701253	579.48901933
##	[4936]	-73.20007975	482.16524597	41.03510529	262.04433949	64.36335626
##	[4941]	73.24993685	255.05853088	-106.90930273	166.21299685	97.97345547
##	[4946]	-113.38359971	261.32466833	129.94512406	151.33059011	47.74634390
##	[4951]	167.78078250	374.46579123	146.62062656	131.84432456	203.40546460
##	[4956]	116.09606725	162.51649285	271.31633720	470.46788492	101.08327315
##	[4961]	142.90318147	430.41650587	137.92505553	341.51011025	130.78830059
##	[4966]	367.30348629	-101.76484168	122.83232086	-50.39918861	155.84060448
##	[4971]	121.00522061	-13.31664170	265.13753183	242.49711178	231.57666284
##	[4976]	30.09317070	129.69944064	70.01278249	211.94662333	-96.24911305
##	[4981]	144.30000031	374.46907186	124.99755517	285.71004609	42.83293680
##	[4986]	198.81173169	-107.42699664	108.20960224	154.91916018	310.57438672
##	[4991]	204.35624530	237.71540565	206.69225599	295.20911055	404.00281161
##	[4996]	153.36404340	246.04447160	207.30168944	85.18650029	143.37380224
##	[5001]	-30.77120605	535.76081479	156.51308514	10.27520742	270.18169431
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##	[5016]	285.09227091	179.28550251	403.49294019	12.33153720	318.11344961
##	[5021]	-53.83678043	537.28903300	62.53224513	40.82466449	268.70684507
##	[5026]	412.65814568	-40.56797791	299.60447754	305.42439915	116.00553145
##	[5031]	184.42987543	289.78701430	-28.63141279	-156.62795405	183.82170419
##	[5036]	138.26127094	235.70415260	-43.61102019	-159.26507623	106.70793210
##	[5041]	142.01022570	234.86343715	7.25217043	69.82506250	83.47134874
##	[5046]	477.70524456	311.42716479	362.58085890	43.70278651	270.94056127
##	[5051]	-18.38343128	201.58068080	209.37239827	375.98901066	429.58028301
##	[5056]	118.53092463	372.71082988	247.62458922	297.71682218	54.23252616
##	[5061]	257.64097594	-68.83103925	-86.96567570	346.17687657	247.83659698
##	[5066]	168.31986031	288.74131087	224.56822988	154.03494653	375.31367463
##	[5071]	198.97373545	330.04830029	351.31562036	-12.24767439	227.11194025
##	[5076]	237.03162389	184.88591255	-96.34506436	-47.88462076	436.86421674
##	[5081]	308.72326397	65.97543595	-139.36933325	-100.05140466	-93.94659260
##	[5086]	40.60100118	235.74132309	268.86307421	187.16948799	-193.26102464
##	[5091]	319.18300287	-100.77911537	-36.81655628	398.89710016	32.60398691
##	[5096]	13.89574436	348.42213187	376.32930720	181.97535033	354.29514246
##	[5101]	360.48815203	248.16511497	220.81243842	264.41439132	449.36659384
##	[5106]	233.10898648	470.16313809	-20.11567569	-46.69298648	531.89036090
##	[5111]	80.80027677	123.35767543	204.65814577	175.71478684	196.89121719
##	[5116]	503.23805142	74.06978286	30.39189224	43.81780303	351.45534728
##	[5121]	492.32005239	226.76890897	-57.33663395	0.74836945	244.70920566
##	[5126]	112.81964357	-33.07123239	285.11034304	-91.25967237	295.40430126
##	[5131]	-40.91168401	543.32727386	293.75420251	242.75442369	99.14352550
##	[5136]	283.93333570	85.48804445	166.13573131	-172.07439924	141.38525503
##	[5141]	434.29515761	352.61062363	106.76374064	386.89876165	407.65002553
##	[5146]	340.26615638	466.31428192	335.32123156	-84.25340808	493.13430060

##	[5151]	167.60960702	138.84246146	174.93902372	89.79955409	-9.63059041
##	[5156]	-306.33686139	-63.01563318	322.32151849	-50.87718678	241.57197404
##	[5161]	165.99875087	301.48806612	166.38224511	94.61296785	94.00797150
##	[5166]	100.69537527	-97.41097126	-28.52413921	-17.58709886	316.46665580
##	[5171]	381.99985232	103.26520201	79.42404688	253.73870527	233.26514408
##	[5176]	400.79511344	43.29139261	16.22137227	65.72237042	124.05673171
##	[5181]	253.13737369	241.63635635	-41.58683018	137.57113793	26.56184883
##	[5186]	54.80047577	213.42308778	59.12135473	-58.12679012	-44.39338406
##	[5191]	221.01754093	-115.24693920	221.90518264	-188.28341909	318.64495458
##	[5196]	47.58016195	135.31734866	283.73775211	63.93320176	482.15424879
##	[5201]	76.15176308	-50.83060929	231.26740748	-17.92525280	134.45583348
##	[5206]	-237.33876770	146.15442089	-94.09220801	-41.34328987	-23.75353144
##	[5211]	332.49751857	167.68204854	310.30502434	236.31408613	89.77141730
##	[5216]	410.83317007	186.50020362	-165.21513696	260.07027127	333.14381418
##	[5221]	-30.75713656	-12.16272137	-26.68471875	214.81424473	122.07730442
##	[5226]	-62.71719713	7.83202277	-129.36380695	411.27436439	107.91967956
##	[5231]	65.37842186	189.10647520	165.55018322	188.27259716	-32.43205928
##	[5236]	158.76098894	356.46600788	62.58587090	123.60056809	21.89722388
##	[5241]	163.22318327	165.64360133	104.03354842	71.56301208	351.19101863
##	[5246]	147.37445224	245.59726946	401.70603170	46.46955857	251.51095084
##	[5251]	77.87750179	17.91915882	72.03725135	182.29138185	200.66660648
##	[5256]	537.77802749	257.04059718	165.20362336	65.19651996	104.65186417
##	[5261]	-112.35553042	205.68115866	268.09980698	303.43841409	77.01439396
##	[5266]	132.33576053	12.30673535	288.18968817	-47.31520620	176.83348541
##	[5271]	21.67741736	83.57854524	264.99469752	58.45050894	53.60641843
##	[5276]	80.29165076	147.75771945	252.69483912	270.66338019	326.17414694
##	[5281]	198.69361384	277.27498375	298.67957425	-42.98447218	53.30612998
##	[5286]	-25.76227824	135.40661231	142.11526512	79.82033318	-14.78725801
##	[5291]	-90.12342794	-27.10271307	160.53959669	393.77751936	289.75291935
##	[5296]	344.49712660	-104.31804982	128.72646220	229.25276119	210.08982877
##	[5301]	43.70310549	-37.10356424	295.38578607	320.39061980	-175.57302493
##	[5306]	173.60038914	-21.32161644	361.02379580	264.97056961	68.02908916
##	[5311]	336.97734961	384.75294317	155.89092113	347.18374812	148.23774486
##	[5316]	226.16340034	3.42924450	95.68713151	125.98415198	108.29362503
##	[5321]	375.84852705	79.84270382	286.04168652	278.24846756	7.98032075
##	[5326]	90.53168524	73.87731830	290.08909476	93.43399915	43.60677968
##	[5331]	104.40338957	415.59525501	90.79100799	304.60121724	77.76357812
##	[5336]	130.90287511	-47.81203790	413.86344821	-38.67743363	360.90921324
##	[5341]	150.58620676	118.34324978	142.56196961	182.38047720	83.93208018
##	[5346]	160.88337379	295.54432857	53.71219021	299.87715352	498.89774355
##	[5351]	4.87555768	250.09626817	-39.80617272	148.40437833	236.53463369
##	[5356]	17.18868731	-134.03295685	85.64531461	-125.67975473	-109.33427159
##	[5361]	127.62748055	-7.79105073	68.21829799	216.91367069	276.44911254
##	[5366]	275.07261297	38.23718997	412.21579281	282.05472374	104.46986073
##	[5371]	191.84564582	226.46669476	280.37157595	301.14674112	177.01840261
##	[5376]	129.23724114	182.19364709	94.96941693	-167.68364414	177.72207792
##	[5381]	8.42108379	406.57769875	404.55076354	302.20343162	114.90203063
##	[5386]	48.57462899	151.63357425	69.30550151	96.31839550	227.81798795
##	[5391]	428.30362444	100.60383907	-96.01888004	116.46978635	129.09115479
##	[5396]	44.74233462	356.84186443	244.91895839	-92.53996161	351.98053265
##	[5401]	-8.22705381	65.13670139	399.42453562	146.43609079	34.01229955
##	[5406]	-146.46198991	153.93646930	-2.06446323	219.37159860	94.48561449
##	[5411]	118.17744594	160.42844870	-59.52593053	199.03658042	172.85801310
##	[5416]	33.64035631	150.61243314	208.38869323	104.96368796	-100.41909669

##	[5421]	404.63539979	35.44589703	327.49440602	449.68422764	27.27248591
##	[5426]	221.22904127	351.51112434	378.32296096	88.02187573	299.96410151
##	[5431]	-7.00708445	-151.38647583	86.30244965	-31.15703870	35.01692239
##	[5436]	134.32854449	159.78445155	413.65488307	-133.70302933	103.34876371
##	[5441]	121.77919094	429.22084963	158.17507128	348.01443857	352.68691775
##	[5446]	345.33419109	414.62052230	17.38366932	26.68834409	136.91856426
##	[5451]	-62.64082874	176.57000760	175.04644850	410.66459262	-90.88408417
##	[5456]	413.41433213	214.68018853	332.53531983	407.55397510	284.07559511
##	[5461]	181.28442541	196.02142204	77.76336983	155.24469258	316.46190776
##	[5466]	201.71674801	164.02460840	10.88133598	188.37339623	-121.90287669
##	[5471]	-28.65803084	89.61065362	78.44448526	-27.51034447	433.21268941
##	[5476]	357.97573828	6.97273107	221.46011200	465.15228010	188.96168332
##	[5481]	251.65871536	310.30929714	408.98383644	145.20812731	304.83247235
##	[5486]	75.15842758	290.68943697	13.09240495	70.89058085	438.37914464
##	[5491]	290.59049700	-87.03332118	65.02254470	130.60122158	46.28785942
##	[5496]	72.87762376	32.35247936	81.79398641	108.32052276	278.58058844
##	[5501]	61.93043270	-163.12160415	213.76334238	80.26924711	266.07329679
##	[5506]	-28.19171576	99.49595831	307.31062359	151.37132077	-87.36885266
##	[5511]	374.41185679	146.59632659	152.58049240	-33.14569789	-8.28619782
##	[5516]	-18.20841019	297.08080469	261.23726186	157.32188516	-146.26899373
##	[5521]	65.67945846	298.17556269	218.93844826	312.40414688	281.05364624
##	[5526]	-13.24979433	-226.75245977	-146.94312703	186.95233131	256.53111944
##	[5531]	280.67174271	118.41424160	-23.33538969	69.28894797	695.84948714
##	[5536]	-153.44138990	216.82285930	174.46997267	156.89966239	313.46415248
##	[5541]	235.19516483	116.21125356	156.94529374	288.32356547	-84.70256631
##	[5546]	211.73299330	-117.18518641	275.47034093	68.24254212	263.30739178
##	[5551]	141.20850139	337.03814622	527.61322755	-72.10297322	133.09209851
##	[5556]	616.07293931	83.99782208	84.55270106	111.92070767	386.49663674
##	[5561]	-15.34939759	35.86886617	40.03576649	230.97376873	-32.01365562
##	[5566]	331.09592899	63.53016377	-12.68184139	-20.76779651	-17.79239025
##	[5571]	-196.46984106	224.16757673	146.49951870	285.25728313	103.18575137
##	[5576]	37.89836868	260.32307575	241.29731108	78.23305681	-119.50279026
##	[5581]	-83.54880354	116.67327051	462.81186068	189.70945198	-142.46662912
##	[5586]	48.94331031	-58.54124917	236.25972161	-28.58650520	342.03357142
##	[5591]	212.48233124	851.65043311	68.24697167	122.97093135	288.36218564
##	[5596]	218.91577317	34.99943801	258.24693349	123.88940625	105.93298087
##	[5601]	-45.68004457	47.43482563	467.30164870	18.84996321	149.98631156
##	[5606]	-40.69494878	41.11492918	413.22096090	301.19475959	178.36172139
##	[5611]	147.40922472	-66.65968862	231.35663532	413.30477037	179.68815408
##	[5616]	98.87315641	21.14871986	208.16123416	183.80224286	-3.54857774
##	[5621]	509.99622800	35.80364401	58.80704870	-28.38251813	35.46303372
##	[5626]	199.51011135	162.45323967	-120.05344814	373.69438219	172.20268277
##	[5631]	70.73633562	133.95872190	293.52142054	81.97575107	211.85075828
##	[5636]	223.93398739	257.95730095	211.52071913	204.94470317	343.64196484
##	[5641]	233.54928761	177.31355733	295.52410771	184.59300686	44.20496817
##	[5646]	220.10901368	280.40028872	73.88943096	222.06500091	-152.05938167
##	[5651]	292.74993342	247.07363233	194.33597108	84.27812256	-91.83621361
##	[5656]	288.41366082	36.11703453	413.03891750	141.62888607	93.12129827
##	[5661]	171.41029997	-153.46340108	-0.87560327	285.03157745	311.46189968
##	[5666]	197.59135784	280.64421381	196.91168768	135.81184554	131.35737603
##	[5671]	69.67527699	202.44101897	199.10021095	-105.11554530	-56.45121834
##	[5676]	217.01747982	160.85820832	436.30816764	124.82428098	-1.62741269
##	[5681]	313.67677938	416.99757989	459.99151224	294.48754175	-7.60800041
##	[5686]	7.44807505	-31.42085086	256.78224240	129.17244996	427.60170750

##	[5691]	-10.05610198	241.63994876	296.04884301	290.80452887	174.62075481
##	[5696]	-106.30341846	3.64313641	313.70296216	31.32012350	337.59429485
##	[5701]	-53.36255321	105.85841655	284.70176456	241.64119616	199.51666237
##	[5706]	84.12418254	70.24066565	205.93394965	38.41310434	226.96255459
##	[5711]	-32.53311317	292.15690323	253.91305290	218.81128880	69.43930965
##	[5716]	367.01821570	356.24798780	265.79217257	159.90033697	506.87237348
##	[5721]	67.89325267	96.17255037	-152.26119880	294.08054349	217.99433300
##	[5726]	103.48496935	219.43803566	263.04656414	223.24460741	61.89789481
##	[5731]	64.81794358	202.85460099	-80.19603773	-35.09523768	236.06581981
##	[5736]	-1.92187745	74.98247503	416.70892940	193.78859206	240.13018039
##	[5741]	453.67815138	186.25214362	40.93213981	281.43910118	13.02016223
##	[5746]	80.50831379	150.33242992	152.86240919	271.62903887	19.30037777
##	[5751]	206.96748061	614.26756342	3.97651493	269.40800982	55.69793040
##	[5756]	281.77280764	411.14002875	54.54735322	-22.52502990	75.88296762
##	[5761]	161.34194824	273.30599515	39.53990181	145.68065803	300.28053666
##	[5766]	36.08899922	51.62160129	165.30062081	-47.84238648	264.17701409
##	[5771]	195.08336729	116.19464019	300.66622689	401.15296595	-87.87624116
##	[5776]	134.39780974	116.33979980	294.11192119	294.63680736	161.37212571
##	[5781]	60.34191366	13.97748883	466.66461871	160.79278813	164.23982134
##	[5786]	-154.66046584	122.31374510	383.36369925	129.66930295	60.01968330
##	[5791]	124.18597144	259.99684609	-34.61674273	-192.28782189	163.16064395
##	[5796]	205.87579054	112.78748270	277.97736196	259.97181489	88.07838027
##	[5801]	210.03900251	253.79849418	144.33554104	201.23141172	310.67653948
##	[5806]	322.14713622	262.62306766	274.62743128	384.66555850	332.39757084
##	[5811]	13.36946033	-24.86211313	186.15151339	168.81061491	179.05791085
##	[5816]	165.33581537	-41.51494244	468.21673788	398.19812743	627.82694834
##	[5821]	349.91693051	203.69697436	86.11009635	31.53110897	126.63513331
##	[5826]	30.74194706	198.32396317	223.96112562	-195.55715723	110.45720383
##	[5831]	347.41013859	351.87415894	104.49279572	239.87563369	198.44190802
##	[5836]	308.70097699	420.87520756	167.00232126	415.26984615	324.75094266
##	[5841]	142.53330279	311.52952820	-93.95842581	397.68489624	160.67842456
##	[5846]	67.81849097	258.15229519	186.11467686	190.68351154	30.75819034
##	[5851]	117.84764533	267.09805314	365.48640195	-62.67945836	253.74379334
##	[5856]	-95.04772174	246.48423368	300.49219440	161.50657962	162.75499023
##	[5861]	174.73162384	109.14999866	336.95203495	-25.29315424	242.62284837
##	[5866]	156.00709781	-28.02052687	459.45655763	28.86932854	-47.42721063
##	[5871]	47.32941260	194.45468780	-22.45225774	228.41396421	79.40263028
##	[5876]	17.93293209	227.25988665	27.39898972	58.50277112	19.79085339
##	[5881]	190.59972553	456.72467268	225.77004483	495.79094247	125.32924146
##	[5886]	382.06447501	15.04619246	-98.52617464	166.22536793	267.38653887
##	[5891]	66.82224712	29.58852113	154.85817835	28.19299266	67.63163271
##	[5896]	234.03436609	0.58578667	348.15271463	352.21812411	-106.38370627
##	[5901]	142.68430426	93.95966806	461.18486737	281.96590912	154.56252321
##	[5906]	48.33858800	109.61767753	133.18744255	320.06270892	150.23625042
##	[5911]	127.91504626	450.42722404	150.28874851	-200.93830545	165.95317182
##	[5916]	546.51170404	251.88452431	208.96820811	347.78663302	78.71468350
##	[5921]	215.62072509	55.37854200	248.19292201	264.15500339	443.91777171
##	[5926]	152.51389705	71.62661044	422.68921603	245.89274592	39.50959879
##	[5931]	297.74911758	-33.84897296	-26.55970847	-52.10626520	-114.11706701
##	[5936]	168.04310904	-35.22238074	235.55430844	369.18635873	68.93166072
##	[5941]	-26.20743017	225.55212585	33.79542684	382.40711934	-57.82751505
##	[5946]	204.92902202	225.26539639	57.04687020	93.54480369	284.75422394
##	[5951]	17.86097462	35.16827925	76.36047394	-57.28631808	129.55759069
##	[5956]	207.38054718	47.21669040	-17.94377284	227.88350695	111.70749187

##	[5961]	151.17038985	173.55886311	134.94458070	199.90040227	-118.62623151
##	[5966]	-138.26703266	63.06695838	50.39950135	124.84566295	278.74321233
##	[5971]	113.34837170	125.61654439	305.56123678	263.13575778	190.46851351
##	[5976]	129.08492778	328.74074952	140.62903459	554.07583306	395.43950735
##	[5981]	123.39779152	70.65316092	339.98747885	108.95768709	-103.19494060
##	[5986]	52.13455983	504.20906261	388.47022512	25.91016637	77.68847801
##	[5991]	152.55244571	288.91300653	150.64370518	269.34359070	144.45589898
##	[5996]	241.86564475	253.04148641	245.54849883	265.56977409	137.43340244
##	[6001]	-86.04683307	282.09101572	244.32873547	9.09067338	186.99376383
##	[6006]	165.13068714	164.96276580	192.12098005	222.30424551	43.49756249
##	[6011]	325.15107724	108.02894619	181.45604558	1.21108601	-44.40123783
##	[6016]	192.84719601	-33.19605646	-25.88879335	-59.97009782	148.42013959
##	[6021]	158.52845638	183.34609945	136.11567126	-172.26793191	168.06875852
##	[6026]	372.66811426	270.64523934	53.10829328	55.02776494	333.95334834
##	[6031]	-43.75873015	440.53637203	-43.75135129	79.53560541	-34.62184628
##	[6036]	-91.40797033	129.42092673	198.77189312	-1.68731836	465.66335118
##	[6041]	455.79922609	82.35449419	214.13636219	319.59174076	-34.51751387
##	[6046]	283.42865034	26.41785773	-101.76679207	217.46611006	309.38492639
##	[6051]	421.16436958	306.78925517	444.80270169	-302.94062969	405.28339254
##	[6056]	345.88401585	90.47798123	292.01324472	132.50211213	153.29455503
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##	[6066]	441.04332335	172.12282561	171.62436128	45.13748532	353.61971732
##	[6071]	-10.58649874	151.46186591	130.80127588	304.50611697	104.49902644
##	[6076]	171.07335881	-25.80206738	136.45291646	49.46886717	94.26705123
##	[6081]	122.88195908	296.88704485	249.52965824	116.00082823	-49.59590895
##	[6086]	162.09778529	275.62778975	213.57178994	328.36911123	189.61673090
##	[6091]	97.20344568	198.01535703	-60.97946900	-88.28766847	231.23093204
##	[6096]	328.23033182	10.51143569	282.80124291	202.17356821	125.53720937
##	[6101]	449.16923481	217.04514992	-77.89541878	319.29829231	181.14864995
##	[6106]	394.16519825	184.79418870	3.46223844	57.80150623	404.62314393
##	[6111]	166.52012608	30.54592004	438.83410372	62.23003541	151.16009617
##	[6116]	171.90651123	174.73304929	119.28928406	203.26716917	269.12384240
##	[6121]	9.55670056	168.22177056	307.85077453	199.75126039	86.39078921
##	[6126]	40.40836840	429.69482339	228.39939957	125.01075484	-24.21758700
##	[6131]	-15.06407209	326.46472606	312.52988612	-19.85482469	191.46854549
##	[6136]	221.16188338	372.83586253	136.69941097	223.10265756	376.84370854
##	[6141]	105.86324317	290.98874646	505.86143722	147.47952019	175.38629238
##	[6146]	31.77070933	145.41590618	157.37281009	159.17065458	35.19400399
##	[6151]	24.66823547	377.41943484	-137.63594746	122.61734536	31.33285002
##	[6156]	-206.24755443	246.44287266	249.45719335	291.57972364	303.78780810
##	[6161]	304.67871007	307.71559462	331.55348437	111.38209777	-36.77520293
##	[6166]	324.32846344	190.38419191	36.40163198	209.39045265	219.68960923
##	[6171]	157.40840672	458.55845228	223.53327889	19.35074527	268.41442079
##	[6176]	100.14303958	-17.31042157	10.32077987	177.02680859	-73.37760949
##	[6181]	73.80451220	194.36406969	72.14280410	524.18870914	260.69135108
##	[6186]	-21.90321386	20.80362612	228.80786797	148.83758777	244.14234757
##	[6191]	94.26681407	-342.69413814	22.73431694	-96.78599654	160.07716408
##	[6196]	371.03784661	84.70621648	134.74050304	14.58890085	245.24448524
##	[6201]	165.30276520	182.05680099	102.23879445	28.21396292	475.38923575
##	[6206]	290.22268171	45.93464822	28.60512398	394.45367115	293.71918322
##	[6211]	-16.74757600	40.22904581	38.87542375	206.48113044	170.44681934
##	[6216]	51.65651177	194.45489456	-37.39780086	230.47227364	257.78515888
##	[6221]	296.41864298	258.44516119	216.00584076	270.74812419	-28.78963842
##	[6226]	176.64547347	464.12505145	224.03482232	-47.17353655	98.27911009

##	[6231]	381.11958087	86.64524843	358.03904088	94.49872113	241.97024360
##	[6236]	176.52498029	100.92125298	38.89521176	59.82272661	99.14208539
##	[6241]	29.72447623	282.36681301	152.30141478	363.02158384	186.36125327
##	[6246]	-28.08673788	194.40961912	115.39932553	256.35305720	393.81527202
##	[6251]	20.03209061	61.84626686	16.75365359	317.14497126	251.20863930
##	[6256]	498.10011585	325.90283741	266.77834081	187.18991887	415.98616248
##	[6261]	383.19402412	148.52515585	-188.49942487	-61.34109796	-14.32643403
##	[6266]	128.91771744	307.08223899	186.38439344	-76.29247252	194.36341357
##	[6271]	283.57883895	123.84931008	220.52773661	243.32974575	23.82950781
##	[6276]	147.35180588	-34.88645608	171.07382401	148.82768757	138.34388367
##	[6281]	351.97257077	502.66181657	149.30829360	200.39558054	353.97157087
##	[6286]	0.25296538	73.44975280	59.18548834	61.20542371	290.98066080
##	[6291]	89.69443372	-59.70571553	73.16158315	452.58662833	269.25500247
##	[6296]	-88.48542967	140.24520348	111.10559888	246.35215114	127.21127320
##	[6301]	-11.63790283	214.36034782	436.51245116	191.09490182	328.33105447
##	[6306]	195.20260613	51.14428612	-16.19028106	-133.77161695	280.31848081
##	[6311]	482.67140095	227.38791622	303.44591475	487.90756864	242.20702136
##	[6316]	116.92532380	500.36280227	-94.05772840	283.36174989	77.62617445
##	[6321]	50.24473159	79.12809166	84.31170273	123.19889711	233.22662254
##	[6326]	133.98485662	81.47832181	218.44639579	-262.72637559	-21.65322626
##	[6331]	224.63696857	78.72943630	177.23463472	83.08601153	210.96705267
##	[6336]	415.79595976	-2.98680387	15.31456359	-57.92390560	3.76104917
##	[6341]	303.39686027	273.12905963	154.85126360	306.53706114	53.85343199
##	[6346]	82.14515991	26.43221757	56.53493341	311.37101074	286.94983948
##	[6351]	101.37591941	169.85531966	489.51825439	64.74117498	233.13909243
##	[6356]	305.48669854	21.22504947	155.53182001	242.32771859	-84.04984913
##	[6361]	239.94916329	387.02877452	27.40238281	186.97898379	227.49405648
##	[6366]	416.15944104	265.28606175	347.36400224	284.29564637	404.47869245
##	[6371]	63.44819640	564.21950568	353.29432526	102.67843859	282.27948416
##	[6376]	260.99221042	93.19868096	273.47141414	19.27656057	245.83381498
##	[6381]	98.35628627	283.60979375	250.50969941	35.66922398	-46.93018212
##	[6386]	-35.21882008	289.12846438	134.91143130	317.13513421	92.59587555
##	[6391]	317.65357404	150.05558951	204.00471887	18.37268855	-44.23278416
##	[6396]	465.00636654	355.18291602	371.33286612	-11.98626594	46.66406404
##	[6401]	-109.77636029	369.15914956	172.14245599	44.25813872	299.64181463
##	[6406]	43.93246352	234.80798431	-10.44104420	181.12631214	399.32233893
##	[6411]	-81.11837353	274.49075469	477.13384178	343.54431239	296.55605648
##	[6416]	25.92644638	46.62624895	334.31313954	347.87804928	55.24605808
##	[6421]	94.29761571	269.09631542	37.46480946	517.40646954	75.38826684
##	[6426]	77.99571915	61.87958835	96.06391698	345.49751910	488.43952854
##	[6431]	172.45325844	-126.79694710	295.67011004	402.06743502	351.54357651
##	[6436]	-21.62260696	11.63525817	104.06403841	50.13348043	-24.86512473
##	[6441]	64.17139923	35.85243612	-202.17386629	61.97892296	300.12296895
##	[6446]	163.17834036	-89.76776067	346.22841554	-148.72403278	46.01861471
##	[6451]	306.56515965	-288.59318597	263.16687796	289.53587629	301.66042887
##	[6456]	107.03271590	175.05097400	142.52098025	137.83124121	376.69597937
##	[6461]	383.72300768	349.89352131	-37.46058698	-66.71349920	126.61916756
##	[6466]	143.08438235	415.18631133	192.21712396	285.88473753	377.27812161
##	[6471]	-91.08961220	190.80273726	215.73393884	220.74871892	95.62488631
##	[6476]	122.68140979	-11.31984836	229.20278992	224.37989679	44.85132653
##	[6481]	286.83489709	107.17096746	234.39908889	219.64256127	341.26612276
##	[6486]	174.68556026	59.25564041	64.42555992	379.42825022	269.16041895
##	[6491]	30.15953673	382.56902695	158.09929934	16.63122645	-14.05846303
##	[6496]	409.86889485	497.85323425	-111.14142382	219.41660803	320.43762408

##	[6501]	211.14584447	291.72417710	306.53475328	355.15791108	18.19979629
##	[6506]	402.35916527	275.21867898	84.64223258	338.07666899	79.33531165
##	[6511]	46.64191541	163.58600422	124.90445101	450.70267332	318.36053285
##	[6516]	431.47978749	370.07538498	59.20969660	102.94645182	-58.07138170
##	[6521]	222.11904950	224.81928940	307.78223995	4.22195464	-30.84587455
##	[6526]	85.70045622	172.22503106	261.93726661	137.72328840	215.48290706
##	[6531]	332.28072760	-284.90278509	196.92215576	24.97373829	305.04584873
##	[6536]	-36.69121107	35.09677206	110.56303404	169.42370405	-166.09338961
##	[6541]	427.61845916	336.09264675	-61.72846619	153.54915380	75.17422883
##	[6546]	539.37150563	553.74798055	296.25846023	387.07245196	202.34169590
##	[6551]	-41.77488723	432.29109226	109.17033498	116.26687917	-208.01275184
##	[6556]	306.39633543	365.48814166	278.65011315	98.88562515	-27.92772643
##	[6561]	-10.85571337	251.93484627	352.03114041	73.13161956	78.31918170
##	[6566]	442.36654565	224.58046820	-63.27790511	160.77801805	74.00820894
##	[6571]	162.90603002	5.63511586	-100.23210156	140.83725653	188.45106772
##	[6576]	236.54493950	202.23650222	246.94918057	-156.25804245	111.47494771
##	[6581]	480.85518702	376.66000220	-53.94600105	201.85786155	37.94602260
##	[6586]	297.34419735	-16.29283551	328.99531986	159.28036943	-70.63233073
##	[6591]	12.76465121	105.39749518	39.29849164	407.46857824	270.43120123
##	[6596]	59.74003025	258.47383400	65.78080932	106.66538603	74.68795905
##	[6601]	-201.42690541	69.35644114	5.28839955	262.49949529	401.46597677
##	[6606]	174.89218440	85.39496503	-104.30283702	271.11155123	15.58490608
##	[6611]	347.68990948	369.87696435	382.11789790	183.77093358	392.65132884
##	[6616]	40.76818348	165.84295634	-69.84878682	201.54859015	297.73351774
##	[6621]	313.24955367	103.86907903	-219.32115083	151.53166987	178.96810287
##	[6626]	-92.39203776	74.12952761	356.13300654	436.64102076	156.68020541
##	[6631]	241.17717121	124.37790851	413.01311883	-64.15897428	-29.82983544
##	[6636]	228.81837243	334.43318071	167.80049531	397.93001330	178.47679671
##	[6641]	162.35986121	179.10574095	-29.47828370	275.96008293	74.52513496
##	[6646]	298.92458293	373.87318036	285.66391355	222.34682551	147.88858434
##	[6651]	-13.05340965	92.38008757	408.87160701	131.09028305	137.90734345
##	[6656]	359.16751146	376.94054318	46.94450674	-83.28770099	265.89800855
##	[6661]	283.46193711	90.20432073	112.45513801	181.14793080	-95.18340575
##	[6666]	-29.66001769	68.21206494	404.03562322	-55.83239089	208.36349059
##	[6671]	161.21426325	496.00172467	210.12848786	114.00105792	-122.78280520
##	[6676]	82.25106474	82.90043940	133.22739653	61.17788234	131.35010374
##	[6681]	476.30772062	244.51223473	159.21048869	-87.47939309	277.61858849
##	[6686]	170.94152310	215.95817452	249.78161187	309.25044604	165.20633344
##	[6691]	91.24377935	200.79679149	23.80877214	-160.68109477	363.98855473
##	[6696]	165.32978496	114.71669293	357.93367580	589.11308204	-51.57702187
##	[6701]	-7.18289731	87.54162784	188.28832107	239.04500255	-37.36159109
##	[6706]	130.22603625	250.43901300	205.03245697	-39.13776377	256.07244851
##	[6711]	244.77058094	6.93753649	97.51327633	186.29058895	243.15527385
##	[6716]	136.06490227	95.43287958	198.40808401	204.96264857	-16.16181967
##	[6721]	79.00539861	180.35750408	175.28738284	-18.44448419	153.71946795
##	[6726]	225.65894114	-46.79063620	88.90428856	-244.90402100	352.50509067
##	[6731]	336.38018006	173.84575184	-363.90159146	199.28448537	195.34934752
##	[6736]	358.37612476	-46.44299769	-19.02439895	297.05056113	298.57931979
##	[6741]	275.06057220	-372.61492674	118.45234184	-131.27763556	420.67950164
##	[6746]	175.65892551	95.28697241	62.54619395	144.78801103	405.39071319
##	[6751]	116.66848485	231.43446695	193.52024014	215.64720533	69.03073812
##	[6756]	188.91986950	225.10486376	188.61522436	-108.26783565	-8.85559801
##	[6761]	-95.15748512	228.60988035	71.36589373	327.88562426	212.19255957
##	[6766]	22.28270166	113.82532673	256.82778671	-94.90990285	113.37881639

##	[6771]	220.77062767	319.13153917	-22.68523415	163.48804630	243.18700639
##	[6776]	88.90402862	-147.65469192	361.18026124	205.38533721	279.08020351
##	[6781]	-51.45046773	147.01579978	43.51935253	419.14818186	-91.32897205
##	[6786]	-93.73785764	232.55008133	169.46692101	-50.35396012	233.57197105
##	[6791]	144.97025373	402.45445839	267.89308989	39.94879715	207.06957516
##	[6796]	191.39977492	44.46810208	226.09695149	226.86816063	161.60057207
##	[6801]	536.91281064	267.24099091	400.17877683	369.46461018	-44.65631053
##	[6806]	313.41870860	168.47401966	42.40245527	115.20859998	453.82885537
##	[6811]	410.19671568	-110.82809091	-85.84007415	-47.67543161	-43.17998595
##	[6816]	-42.95695251	413.56583183	101.81277406	-60.08146823	6.81245429
##	[6821]	98.47769158	-29.85888492	320.65486147	5.37358323	52.39995775
##	[6826]	331.31216452	-237.65694103	-6.63593558	111.89943969	270.30444198
##	[6831]	205.86379860	257.43054256	6.89447675	32.28470972	-159.99633815
##	[6836]	-51.33367783	63.40091959	254.72603142	246.32403990	118.28030973
##	[6841]	37.52366140	32.28571395	176.79617169	216.91737005	317.39482195
##	[6846]	234.92479152	-68.67084662	364.38737783	39.22848241	80.96473704
##	[6851]	91.56264159	129.17475877	416.67643288	1.71282053	86.44291074
##	[6856]	431.80946667	101.78977130	73.07292482	206.25756848	-63.01971080
##	[6861]	100.73013441	264.79426565	309.06942560	420.23974471	9.24429567
##	[6866]	330.74954546	235.98686639	385.11013841	74.95555627	121.69248714
##	[6871]	-129.32264077	306.35945307	31.12667598	349.55111013	16.15645697
##	[6876]	46.86572780	335.97562914	243.92428496	42.80062455	274.69561416
##	[6881]	20.17825304	-142.80867027	318.78908577	32.20996664	63.13860360
##	[6886]	170.07781548	267.14537269	276.11945402	-139.79177840	376.33965488
##	[6891]	221.86955949	526.08440066	384.65855971	275.19877345	59.06623411
##	[6896]	124.40621259	261.81851885	326.36168709	102.33186753	273.01023721
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##	[6921]	51.61894966	45.32406898	-51.53675023	-27.31997046	232.87060004
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##	[6936]	173.56864890	-234.80346818	396.34118068	505.60248664	-52.95534155
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##	[6951]	393.54042969	21.24751687	11.24108812	117.54776450	324.38544789
##	[6956]	-4.71015677	168.94340969	29.45946999	150.87702250	168.03134170
##	[6961]	171.10545208	350.40504902	228.37544973	-226.26275399	199.09358098
##	[6966]	-52.97781240	252.68487263	289.32652126	315.68812343	-111.26167306
##	[6971]	118.53038964	336.23010568	156.25564908	390.62658503	414.07076608
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##	[6986]	-112.11636342	-19.50152556	102.29180215	69.25769582	304.14769313
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##	[6996]	49.23431504	210.75944612	96.83492598	16.04709988	198.65663560
##	[7001]	321.59237008	18.83037367	220.40334100	336.36557527	-38.13866509
##	[7006]	237.35865054	52.79901220	-125.53571616	281.03806410	226.61143243
##	[7011]	-1.73345257	135.21845407	159.04403031	-8.70203470	299.38178456
##	[7016]	28.65737301	305.15346934	341.34927496	-120.14493227	189.07049529
##	[7021]	38.97448427	302.48816838	268.88534645	221.62150807	-86.23904614
##	[7026]	361.21479405	130.14572475	324.27115080	112.55722374	145.57611041
##	[7031]	-2.11648802	-83.30164995	0.45934603	281.91010669	15.72539781
##	[7036]	184.46123012	267.32255957	-130.78051509	-49.27272579	-17.20644156

##	[7041]	-16.99501619	359.06766937	91.24428812	364.96802677	-43.88399359
##	[7046]	-119.74303081	228.55723296	283.59157853	-83.07973817	29.14727292
##	[7051]	438.45779334	71.97624044	200.81543637	107.93755032	-202.99828869
##	[7056]	136.49580112	-118.52847325	65.74386692	240.50480445	95.93519326
##	[7061]	266.78130528	224.92718176	51.57517915	353.96351175	106.76585717
##	[7066]	32.34211727	34.46644790	350.79376940	327.38006182	166.75069905
##	[7071]	229.44952824	209.58185114	-53.16841835	367.46627906	466.71972570
##	[7076]	142.23537509	-91.12043453	178.06327056	262.02335205	267.18961241
##	[7081]	304.64074399	309.52481573	249.02177750	291.13222635	52.85487773
##	[7086]	206.61258778	169.47698261	240.00353300	197.04624774	281.24948169
##	[7091]	475.81552371	-36.18591100	-352.93346046	40.46506982	606.38937306
##	[7096]	83.44631430	148.28753697	276.59001201	312.60274875	93.11606971
##	[7101]	291.81759919	40.96562958	358.46888037	79.15857008	130.30472195
##	[7106]	-183.61534475	42.56270052	-115.74344098	526.26136548	-97.67244937
##	[7111]	-133.42895716	-235.33781903	335.86232939	75.35833172	101.45055027
##	[7116]	269.82253782	91.43183974	185.89652208	300.37411430	482.87643954
##	[7121]	295.60854658	183.37409882	295.24927145	184.07795336	102.62121643
##	[7126]	132.01406737	125.46439896	502.84684536	394.60354420	176.52939310
##	[7131]	460.81393764	211.37727926	79.10291640	471.07941185	368.44606696
##	[7136]	123.41737181	101.84403890	203.77605113	-122.01838236	322.14027509
##	[7141]	110.34276467	120.82531976	163.29985728	-39.09536329	441.85642092
##	[7146]	183.40409278	249.46577411	659.52737732	89.04565229	-7.97628540
##	[7151]	14.28800937	-147.46639771	33.45133946	160.15296435	207.49023896
##	[7156]	315.30419627	-104.81904156	185.14105284	-39.32653258	-40.06916867
##	[7161]	160.26145361	73.98018756	379.72779601	330.29167310	321.24063607
##	[7166]	166.04605458	355.27265133	29.22618042	-29.78106488	78.47780764
##	[7171]	197.68994241	5.60813273	256.13098420	141.34000365	163.82782196
##	[7176]	138.45761195	355.89725876	-89.99135351	210.11210900	-34.92762883
##	[7181]	173.75110838	82.81054820	11.05266328	-75.57321738	-48.31375877
##	[7186]	396.79606061	279.91687722	223.03845927	433.04572708	245.76800100
##	[7191]	29.94993535	374.01996035	499.70355887	51.62027775	43.78287982
##	[7196]	341.82075399	110.10081043	161.75628619	346.18785222	195.81570335
##	[7201]	141.13567538	359.08395374	47.24441998	139.11968402	180.59489154
##	[7206]	109.77909961	57.98022566	165.59437779	-105.12255270	35.52463916
##	[7211]	-89.83515137	374.08827502	280.47363864	33.24514187	342.87805796
##	[7216]	457.07415011	318.69075798	354.59388571	128.51034151	79.37798091
##	[7221]	532.21371163	79.82480676	425.74639907	320.12255935	143.60047239
##	[7226]	-21.02626536	-278.66615118	258.73783764	44.64620406	230.33088442
##	[7231]	-125.45003236	353.19807523	365.48045849	-90.20512702	14.47133703
##	[7236]	-31.57555854	511.99897238	-48.18255458	151.51955750	282.84745586
##	[7241]	106.56658362	417.36401326	163.62618141	-54.32835674	383.57499801
##	[7246]	333.33908866	122.57333360	64.50190103	58.58618910	104.92862348
##	[7251]	201.86807771	262.12831773	201.81875543	29.99603612	111.97113490
##	[7256]	-13.91380773	117.07832783	161.05200786	205.71602851	185.05069385
##	[7261]	392.80678381	364.09650336	120.19521711	-24.89320192	-155.04361015
##	[7266]	184.59407570	-84.05032210	473.22607776	232.02036356	-110.27005406
##	[7271]	197.83521578	597.61573453	112.78828228	277.36352901	223.86849858
##	[7276]	377.39760969	29.80287147	323.60278643	91.81913583	279.54366791
##	[7281]	443.73204366	412.38499061	238.08054184	66.01244240	34.75076465
##	[7286]	126.71151223	296.59055147	16.70373879	-43.66771531	324.73671195
##	[7291]	234.07103996	18.51025737	224.98195751	460.94463372	230.40848057
##	[7296]	237.17120608	-198.61601745	21.06095942	180.81964830	181.92198849
##	[7301]	160.09418528	45.87068703	268.12881085	525.18449785	276.24899999
##	[7306]	247.34276154	419.39656541	215.54721374	32.49710600	362.70870407

##	[7311]	-29.70285208	140.81943635	233.53564950	17.65532706	-84.76394681
##	[7316]	343.02116485	-27.71860042	154.87283883	171.88584843	-135.41810506
##	[7321]	-5.39043143	29.76742900	12.68968936	206.45825903	-17.04940647
##	[7326]	209.19335437	384.34257766	-26.64459070	-108.79193239	134.66894229
##	[7331]	180.30723164	266.54729046	150.77336496	-270.61899472	-117.93104357
##	[7336]	115.12761513	300.64351273	285.69735737	-49.96718755	62.74917828
##	[7341]	167.73862618	122.18330709	360.67411244	115.84745718	71.56107118
##	[7346]	162.93850222	5.06694309	-302.77168305	157.68403418	151.71872670
##	[7351]	87.69082198	200.02583677	-35.93650502	136.20074550	200.42439198
##	[7356]	73.32468836	61.37549287	155.71891424	208.49613014	220.64446764
##	[7361]	290.45231353	150.10356375	-86.38244664	279.18180844	353.15641777
##	[7366]	139.31681494	327.84635682	436.23064345	402.40535170	47.62878765
##	[7371]	-55.19607003	155.10051543	241.85161663	86.37387962	37.75142629
##	[7376]	-160.38909011	293.09929080	77.80325772	88.53532978	23.99461395
##	[7381]	108.21408084	318.46816508	63.83076539	253.18964444	289.59653059
##	[7386]	195.75286745	97.36840538	338.64167244	83.83142450	10.30568239
##	[7391]	241.50232860	85.70004603	506.61605708	106.83828861	110.22726860
##	[7396]	45.01386709	154.02242952	-62.64100842	-54.65418387	-62.56182782
##	[7401]	106.10985295	-69.17707539	450.94705917	-217.12035574	54.15818925
##	[7406]	-44.00458570	212.92309465	124.48583112	245.34402876	202.52111646
##	[7411]	322.22044100	127.21358503	-4.72318193	244.99020000	36.01374681
##	[7416]	128.22074059	161.82512628	346.54180801	410.16789078	136.81852095
##	[7421]	-54.43657164	-32.88216813	84.62146007	196.48454904	276.26946447
##	[7426]	-93.01444246	135.18169093	16.31061159	79.08878566	-67.28232867
##	[7431]	99.55086249	246.87567094	192.93795002	219.40612596	59.04162833
##	[7436]	61.59997723	145.30992686	188.87688687	302.82238625	242.02655353
##	[7441]	323.98760007	226.81417071	90.25247735	105.85060374	421.77817346
##	[7446]	123.52817416	222.07640882	-94.18681078	130.49888167	-133.43657956
##	[7451]	179.71355328	-76.54043588	248.77193115	59.12954283	232.77845992
##	[7456]	-79.85550563	201.82245736	-64.34791741	227.03787634	221.04652454
##	[7461]	224.04915983	113.49494157	457.85981298	302.98942628	230.14899810
##	[7466]	164.16148949	148.96637208	298.85439321	-58.92299802	141.88350669
##	[7471]	232.63566999	126.07909759	120.31271418	-71.71305212	326.52137668
##	[7476]	-407.34137537	144.93883230	372.38748469	90.16796407	47.44312517
##	[7481]	148.22624464	175.67036211	-129.14472785	146.72892952	694.11373482
##	[7486]	291.87513437	75.67747132	340.46279979	245.21456956	156.06220387
##	[7491]	32.76679785	-21.61783960	252.81619499	242.88681181	193.22966709
##	[7496]	82.65490123	98.30292497	85.64214834	356.59555004	149.20692063
##	[7501]	202.53555471	294.48503594	0.29062692	412.14249931	96.13772837
##	[7506]	237.06486674	85.05226171	378.70520244	10.36797132	271.41007298
##	[7511]	36.03357033	263.18356552	189.40240185	103.97476729	248.60826836
##	[7516]	448.46976132	112.15566268	36.86610281	2.22161383	-11.01059715
##	[7521]	194.99037254	38.51457076	-83.81664469	298.88044848	131.93897108
##	[7526]	131.72963185	217.20965392	230.79222017	164.84981346	277.06209716
##	[7531]	437.98457292	294.32337565	160.24821737	-27.64231380	106.12866314
##	[7536]	152.33095997	133.69247327	79.63670263	233.60763057	377.92542144
##	[7541]	-91.90093219	344.33037458	85.18453692	274.40335883	2.04668220
##	[7546]	142.06699987	333.83403459	-232.73019422	134.46772254	233.92054223
##	[7551]	-58.70297087	132.38598776	169.52618087	44.82224104	55.44229168
##	[7556]	101.36365938	167.74416306	219.41937600	153.02157087	299.78324442
##	[7561]	141.11634626	303.45586613	345.87531639	379.63916012	171.12111313
##	[7566]	169.96041444	199.94089962	291.17777700	446.80505867	117.56764166
##	[7571]	433.18808626	198.38720105	14.54509564	-54.82307773	328.21911115
##	[7576]	373.57852534	319.26525727	405.12337732	208.27090649	267.00311369

##	[7581]	184.34342871	720.32737383	-5.97121382	-17.39510659	-36.95603793
##	[7586]	217.78820767	-178.05933232	226.76122266	333.19732643	396.51623045
##	[7591]	181.02506246	124.82494068	250.79797535	113.90513619	216.68157319
##	[7596]	226.40507212	49.26588250	210.76218461	204.39328560	507.75666284
##	[7601]	266.98571256	308.36033065	196.69774829	290.71233176	-108.86273428
##	[7606]	31.73228408	236.86793046	300.70463609	243.42263207	290.04873395
##	[7611]	254.14943621	455.50259305	-168.08084680	143.30120823	336.44934886
##	[7616]	126.45411184	-62.24290966	323.47836392	-3.51543667	426.67614646
##	[7621]	231.24098075	15.90031551	109.50716062	285.92639482	268.08675814
##	[7626]	53.20256966	376.04700055	26.59677837	136.26596360	219.17724388
##	[7631]	-3.23915331	236.87778954	-216.44058951	156.48264242	146.47563266
##	[7636]	248.30157934	291.36020558	210.06268105	83.26909440	12.83356444
##	[7641]	157.18955651	105.63649704	489.91074538	281.53712667	143.97266558
##	[7646]	191.53968269	96.12435893	343.25616842	118.62827750	106.68912118
##	[7651]	281.33260797	202.67561400	129.11513672	262.70362552	199.38042315
##	[7656]	82.63137452	264.71497589	-82.40500314	202.85817181	381.31769049
##	[7661]	158.63174125	117.56343295	264.01741740	280.27580515	34.71793327
##	[7666]	270.67826427	1.33175419	-19.94561461	62.03947326	330.16250023
##	[7671]	23.83911630	-29.35973060	397.41255837	222.19873552	139.47337495
##	[7676]	147.70888180	388.51698315	75.58192181	190.57545132	5.59029715
##	[7681]	114.97797382	446.82463650	402.87488034	49.49223027	398.08693267
##	[7686]	196.50855166	64.52800104	84.60784789	-48.79098270	117.64535814
##	[7691]	2.84468412	98.84366024	91.87736477	430.50410543	106.57595028
##	[7696]	13.58576463	52.14390812	242.59702703	141.38859058	104.25035970
##	[7701]	-45.09259985	194.69639879	142.30823469	183.89360871	154.72535633
##	[7706]	138.37619498	337.48101918	218.31213750	208.65743732	310.13894981
##	[7711]	300.79819286	143.31889673	-15.40695022	59.32261181	-4.94431391
##	[7716]	-144.69785612	-12.87172377	482.16315354	131.64214687	158.26005771
##	[7721]	45.26234735	-67.69002908	135.73523673	197.01214575	193.18760374
##	[7726]	268.75706760	144.36155103	79.45803205	272.00151540	203.47755895
##	[7731]	16.76338871	104.80917663	45.77535157	165.43463156	1.65377138
##	[7736]	192.05972718	110.94731108	297.34686744	36.96882735	-58.59126886
##	[7741]	-47.69574296	244.97706925	30.70262229	86.87153084	261.95403976
##	[7746]	88.23560865	95.62841328	247.93820008	174.61436287	119.72549416
##	[7751]	358.99947775	284.67460264	224.36952859	100.99474486	88.43299246
##	[7756]	223.00209622	38.26675803	150.91240078	170.66437337	96.17161205
##	[7761]	313.44436895	-58.71752464	-251.06617810	99.34470784	411.60835833
##	[7766]	57.62316250	276.27011424	430.06356087	107.42674637	284.53499070
##	[7771]	280.24247219	329.78568185	373.05773416	388.90865527	376.40244192
##	[7776]	22.15401734	76.90748658	134.66669484	343.60952225	317.89403559
##	[7781]	54.80988133	165.63582901	-106.99544821	220.08779499	152.57212223
##	[7786]	281.38274611	138.80641729	436.96634256	215.96332660	223.38420573
##	[7791]	97.68722417	438.19470853	208.17835666	64.12194987	52.76856248
##	[7796]	-41.83006356	392.07425461	-29.48362143	299.27448106	343.99739812
##	[7801]	186.47743927	340.18941242	114.99417518	53.28498486	214.02644559
##	[7806]	151.79496585	3.97522870	195.98445967	282.84723615	234.78344421
##	[7811]	296.42929151	19.68030174	10.33888723	-89.92801299	197.42272878
##	[7816]	476.21021682	113.55237635	486.41865586	189.22853689	-42.03601808
##	[7821]	388.55324015	162.03861248	99.76797811	171.34270801	-183.16248896
##	[7826]	198.63895606	149.48695607	-22.58148567	305.86702115	52.49104155
##	[7831]	30.40125496	395.92058437	44.50087929	422.93214013	-11.77010785
##	[7836]	286.08770488	219.20701067	-235.39391126	-18.74709700	197.20806702
##	[7841]	-142.47586421	275.76535388	152.11155396	358.49009592	63.22032994
##	[7846]	205.26744082	303.15204920	264.95164063	174.77564724	15.39523799

##	[7851]	45.58926571	85.82940582	358.47010532	299.00064167	221.31519215
##	[7856]	152.62998658	6.90319499	-14.50723526	66.91328014	261.20519534
##	[7861]	-37.95133931	130.52893935	127.20980769	210.85181585	-49.81553625
##	[7866]	-64.96061496	283.59724487	258.77981982	142.02633561	151.07466995
##	[7871]	194.64452839	167.67126029	188.00645939	-57.77803540	27.65232739
##	[7876]	5.03952177	213.66233446	66.29284734	125.20143073	440.98699717
##	[7881]	250.37024253	294.37873423	119.77305960	269.77841051	415.53557434
##	[7886]	173.49427322	-19.68262883	206.54613303	118.10824437	109.94877354
##	[7891]	-277.83758573	-89.82338474	5.00536168	-102.46034276	219.55598863
##	[7896]	181.10688590	-77.46237639	80.55930211	369.18816212	100.29008675
##	[7901]	56.61088976	23.28095891	142.87684039	-80.49173359	28.77165289
##	[7906]	61.47353733	273.21332830	353.82040605	411.98060561	-7.83292966
##	[7911]	-18.18142413	517.48030024	28.42235370	-10.25829755	143.58423645
##	[7916]	586.89156526	158.46189219	329.73331284	143.96907783	206.05795539
##	[7921]	39.32455390	189.64125077	155.79936486	-150.62282090	418.37700771
##	[7926]	86.68436900	431.30495433	61.55074903	287.07306314	370.47930436
##	[7931]	30.88696624	21.64846116	186.00508101	431.25717988	-82.35543210
##	[7936]	287.49889673	66.28132770	-148.74565343	249.39091203	-27.05170600
##	[7941]	75.76136187	364.35263075	122.19636256	259.60585035	-104.76657718
##	[7946]	100.17819126	170.74379325	189.48140169	216.17228740	-69.53015606
##	[7951]	158.76541929	246.09239964	-129.34745275	100.64348884	289.85663760
##	[7956]	250.94101667	-61.11076844	60.06512145	294.33833732	130.81776690
##	[7961]	4.80848511	328.27607016	386.45852480	52.58298177	411.72218659
##	[7966]	293.49734160	152.84920123	144.71116407	323.89708006	10.06555451
##	[7971]	200.77256005	335.20558603	221.34987868	122.70081617	205.02123977
##	[7976]	108.15920017	-14.26526802	158.23027847	276.52815413	174.37439980
##	[7981]	144.91669745	169.60839001	-19.18257019	395.34294801	234.27265773
##	[7986]	246.13303981	448.91553426	355.76607601	305.90546758	153.71913884
##	[7991]	95.56739249	345.17657280	-80.87007246	275.96398579	314.49447752
##	[7996]	250.83799254	363.07246265	-188.58284231	-106.23946108	69.31273228
##	[8001]	72.38371827	222.97523692	-151.70879015	706.59237028	240.75963442
##	[8006]	135.64581918	136.62616521	184.52331144	-50.67735721	221.30728425
##	[8011]	76.54300500	51.93156470	235.82415619	-8.31667042	27.30432500
##	[8016]	274.36483569	118.03358367	80.71710264	167.08061223	10.49726269
##	[8021]	260.59292958	-22.34821614	140.68515155	238.22520279	91.23687505
##	[8026]	327.94600730	252.53572121	27.53916940	87.33893563	492.20035720
##	[8031]	414.77933443	527.46695809	534.00976730	310.54676151	110.39968244
##	[8036]	-210.44725289	221.45947907	-63.40261679	121.32155428	57.70828878
##	[8041]	-18.45747413	333.82244570	97.56795376	4.09900251	64.35249669
##	[8046]	110.27597261	228.80491941	26.43824813	177.00674709	145.46504569
##	[8051]	96.90110967	66.33566875	-93.04294813	118.32821964	159.71207324
##	[8056]	251.74464462	43.79253564	69.24746524	80.04891773	-122.68455240
##	[8061]	130.45826681	243.98275930	-146.38408649	305.93397866	533.39373473
##	[8066]	137.41918136	0.61536267	234.50625817	-28.51057294	395.27872797
##	[8071]	84.69120927	206.93443739	223.29743030	390.48009214	345.36179151
##	[8076]	5.40637632	57.06888720	-191.75188217	397.41621146	119.07370715
##	[8081]	178.24240523	192.83256503	399.76689402	112.05470363	100.33989597
##	[8086]	-74.31390695	215.25392569	164.35475812	202.61953625	-173.58492471
##	[8091]	358.37532038	-18.18438833	-117.68510131	221.90435374	30.74987944
##	[8096]	433.90311671	101.99438615	-21.08738267	18.48769530	195.30612555
##	[8101]	360.67558927	135.95562147	21.40873796	92.95324988	246.47753935
##	[8106]	68.87841542	148.72745737	207.72118343	-12.88761453	215.87989494
##	[8111]	125.69735364	195.26833931	44.58753538	133.38739418	68.47930078
##	[8116]	-3.86919887	194.99563093	109.23747066	-244.15677091	251.12354004

##	[8121]	55.90433168	164.66333194	242.25838081	1.16621718	-124.40977671
##	[8126]	51.40837522	241.37086418	92.84847717	-9.99385423	326.37680735
##	[8131]	139.49049410	440.68556471	280.78497582	46.62620876	190.79492119
##	[8136]	-97.47594104	435.05221273	130.05497785	162.26752507	78.13609830
##	[8141]	122.34351983	-12.52463061	96.88091112	220.53621894	111.12932979
##	[8146]	249.31948135	-62.96517211	429.58045238	-12.98643841	48.14127916
##	[8151]	43.85509562	-82.78684849	50.02464293	342.14537946	27.49493417
##	[8156]	-122.27969848	96.85491173	268.83043511	427.95414226	-99.54325036
##	[8161]	-22.28835586	55.51670060	361.57266473	-105.26622032	127.17583215
##	[8166]	235.39737546	180.30889691	284.28696502	234.20265120	339.49703259
##	[8171]	206.04074166	9.12138135	-52.20566760	27.02563524	299.30403922
##	[8176]	515.24934215	77.13212007	188.16918539	147.29689194	234.31324563
##	[8181]	-36.61354148	27.66167954	89.17599383	250.15058903	647.23129649
##	[8186]	260.88357446	-205.96441131	-154.11878439	65.93817550	265.73264322
##	[8191]	252.07240705	42.72309398	263.51709290	111.32577283	236.63593920
##	[8196]	51.16669248	323.35313021	193.82009067	569.08769271	102.83444873
##	[8201]	367.42888578	143.02461268	-126.23282047	369.01661773	202.87317833
##	[8206]	167.38378414	301.06475814	-83.43602165	-11.85494098	285.45577770
##	[8211]	-52.13902807	14.64466680	174.78484671	58.02644239	227.23933476
##	[8216]	88.73888719	159.10832446	144.75333634	393.39853032	123.92633223
##	[8221]	246.30486462	306.30752283	295.98514812	346.82565028	299.60812362
##	[8226]	-254.14780849	61.73717382	278.31929423	170.51771519	33.64915693
##	[8231]	98.86124906	73.21182329	80.00883909	559.98482383	215.32668014
##	[8236]	81.60791067	327.22390422	64.44014968	221.65058053	-76.53989152
##	[8241]	119.80056760	292.74464182	129.78117053	-8.00992748	67.54992407
##	[8246]	-175.84294029	81.89419515	404.51091221	437.26800735	330.56760348
##	[8251]	317.28201254	46.69788239	246.10139292	157.49469929	-73.97099906
##	[8256]	87.57865627	-157.57450139	16.13435388	151.85820716	254.07893194
##	[8261]	9.45272438	159.62649820	111.79184890	120.99127765	219.69690155
##	[8266]	349.76858270	136.28243908	126.54338208	427.85966084	16.36930321
##	[8271]	89.47722454	231.49577150	341.65136805	136.61369706	97.54703874
##	[8276]	256.24197449	436.64519804	181.20564829	184.23484810	-70.40293603
##	[8281]	-6.59140807	392.85989840	85.86103815	111.20784964	145.96429095
##	[8286]	117.40008200	221.16849877	-4.28063207	73.12494279	-76.88656678
##	[8291]	168.08448525	403.44618916	9.59544966	182.05598736	67.45377897
##	[8296]	77.78318494	486.22625993	326.06312477	236.21877952	417.21869141
##	[8301]	358.54543208	176.78163369	226.27648816	-48.81813309	-68.73852037
##	[8306]	35.67377980	376.83259717	-48.09371024	205.82328951	81.79455811
##	[8311]	387.39342871	233.20348277	46.56746211	114.20992663	-160.62009490
##	[8316]	304.22322187	480.39679758	194.88890760	-189.98483733	-90.80257882
##	[8321]	229.76153967	115.32251199	19.39016735	284.31847725	426.97104670
##	[8326]	16.42716645	201.00513912	502.95970898	325.20467202	95.64817049
##	[8331]	398.27885406	-62.01919345	386.17334309	-30.60384669	259.19864815
##	[8336]	218.69329763	21.14422972	11.52289916	104.56597501	5.29591996
##	[8341]	295.69694528	170.71810127	245.75329574	180.90308419	310.32227228
##	[8346]	57.72616883	-105.02455549	-30.65055604	-42.65916163	44.41490284
##	[8351]	181.35418249	247.59229997	110.61337190	-174.23786811	20.53681420
##	[8356]	99.84870898	58.06686695	-45.03092319	105.96979885	325.12548175
##	[8361]	295.16102504	39.55201118	141.91211832	111.56249989	299.46111889
##	[8366]	169.89512692	284.65622133	-17.32291516	256.24954436	99.21294375
##	[8371]	60.38989742	-82.91466964	363.93984652	486.98364193	196.91198153
##	[8376]	337.79888274	101.78562262	172.30515975	293.27477170	151.02628617
##	[8381]	26.20338310	329.46339402	127.83279157	30.52244547	347.76433948
##	[8386]	235.56858060	196.93799508	-99.76258683	49.51694965	81.54617174

##	[8391]	-244.59686905	-311.12042685	188.53383786	74.69419427	372.47885241
##	[8396]	206.49376125	68.28706809	17.31150038	222.85954940	87.51947322
##	[8401]	-106.05490528	141.97221787	232.67603109	205.25085044	204.97906106
##	[8406]	208.83916180	164.91044023	126.77068796	142.30128019	304.92690309
##	[8411]	135.92661595	-66.36760882	-79.52103960	92.13084754	417.03237703
##	[8416]	58.86005336	115.36038074	200.07306909	419.23447584	164.99957280
##	[8421]	139.39195516	127.65610755	216.97378268	282.34245022	-67.20850445
##	[8426]	225.19147293	207.69772925	21.73180894	16.06048498	519.22534548
##	[8431]	174.92313391	18.24980266	274.26149435	307.63548395	253.91397558
##	[8436]	84.93214136	89.44473059	-27.67147077	98.49783703	-50.59799748
##	[8441]	494.05561825	-78.51611910	95.86782825	331.60007438	241.33083237
##	[8446]	-158.71375261	-17.49824579	-193.00903649	506.84880186	302.32283361
##	[8451]	118.75842494	171.39352942	235.40480766	92.82733752	323.68023929
##	[8456]	-60.52928483	92.39697456	281.71547986	1.15654573	352.09059030
##	[8461]	239.01321166	134.39886231	110.22120717	315.63111246	350.65969959
##	[8466]	60.93474291	47.78582059	128.35054006	272.89939513	336.19592728
##	[8471]	322.88969512	320.96787634	41.95663647	324.56451425	91.85928530
##	[8476]	30.51988468	66.67948311	-194.60460247	329.59637821	89.42170846
##	[8481]	111.58200020	131.43739834	452.30911070	257.30785260	-39.80584570
##	[8486]	-68.24125146	152.20311737	413.15982236	270.63012789	200.59562518
##	[8491]	245.59299146	217.89177877	-142.55456562	-65.01082116	95.69148513
##	[8496]	172.28721412	255.28457541	157.33761197	315.58108706	134.52342961
##	[8501]	91.89436941	180.01400809	17.98072167	-139.70861574	231.56981662
##	[8506]	384.99505805	209.05200053	243.85432826	211.60254329	219.52085130
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##	[8516]	202.15136341	74.54576557	302.74391244	26.37990587	245.85383077
##	[8521]	167.82811775	92.10015044	-81.05295722	230.99352541	290.38112165
##	[8526]	296.25019806	138.99990257	158.49641396	164.98199256	-68.72188284
##	[8531]	59.61432915	92.81160923	46.52904820	214.30719484	-232.85078477
##	[8536]	44.89771951	153.58792311	98.93697992	344.87621055	104.90271595
##	[8541]	397.34198668	174.12637975	278.44535029	-10.45031638	280.02558206
##	[8546]	277.69614970	110.50481506	129.04008445	369.00425351	-116.04708308
##	[8551]	306.60543301	-37.87442935	-16.65796119	144.34303879	112.51478172
##	[8556]	316.60926518	257.49041709	407.81581428	96.02534372	339.86804216
##	[8561]	285.41029665	552.40571562	-32.87047996	42.34468588	319.28897828
##	[8566]	-18.04805341	-28.28420722	391.84595404	48.21865155	34.60472703
##	[8571]	-8.31551095	-71.46572751	363.39096130	65.85057546	190.55595071
##	[8576]	473.18406314	80.76000511	97.27504997	227.33231544	254.30254395
##	[8581]	205.08659607	132.67907370	374.29337256	317.43275087	265.44950497
##	[8586]	127.97361514	225.36769331	129.45116512	154.97231997	102.15996067
##	[8591]	334.55683380	104.14667417	128.67145869	338.79223344	3.76505820
##	[8596]	212.49918801	202.68935293	196.37640815	341.32872463	301.23026798
##	[8601]	34.75578456	-56.32134068	225.26647690	142.42579409	-149.13968634
##	[8606]	177.61371821	67.53011959	250.68237226	292.06493581	-9.99543523
##	[8611]	306.03566744	156.54540850	29.91344991	143.88333317	-52.48052732
##	[8616]	-89.00552328	213.11254369	-74.70704068	65.67999219	127.21025279
##	[8621]	299.43327555	467.98201443	160.32982495	-96.56106313	152.14770934
##	[8626]	355.45028333	150.42787878	323.02184476	365.80801606	357.41666990
##	[8631]	163.24264376	99.97312823	110.16437557	36.74093520	181.24173273
##	[8636]	-192.01488164	202.69395006	354.47468409	178.68200368	310.90440487
##	[8641]	481.10654336	-43.66827176	-269.88354564	245.66551245	207.11679524
##	[8646]	-208.05600297	275.69235913	144.18435522	35.95457513	-41.12250145
##	[8651]	58.94285782	73.66501975	256.40029728	80.86489299	135.50054008
##	[8656]	295.05594321	445.81133634	78.00142794	-46.21696477	207.31513320

##	[8661]	372.72791451	106.03832164	-95.57208429	167.79500590	132.37079352
##	[8666]	194.83597300	-132.19015525	165.62813640	249.60223839	61.03504304
##	[8671]	162.53356064	278.27067815	120.74616084	59.26757312	-79.83229502
##	[8676]	154.16114921	97.82558284	-1.81413944	477.25282974	-182.59521324
##	[8681]	-206.15133060	153.19624132	308.79105948	435.73361974	182.24103464
##	[8686]	-72.26683695	-30.59190068	143.96765494	227.99879524	445.76189537
##	[8691]	49.96259853	388.58559260	92.74366045	135.62659711	-37.56543957
##	[8696]	177.55808543	300.78624657	168.17224114	397.18555059	-124.09511879
##	[8701]	-88.43891643	69.21655253	17.27048246	-127.09371276	-1.78028805
##	[8706]	-161.57305239	233.71116912	134.84647483	244.51214445	92.27024259
##	[8711]	267.90270886	14.40264438	199.55731911	112.98835730	2.16627018
##	[8716]	-6.67822104	43.97511644	214.84497723	16.62405130	313.73531708
##	[8721]	323.01644809	70.04236885	163.26800426	164.53501311	238.96144778
##	[8726]	160.58073682	96.53562224	-4.68596814	246.55394979	375.22052985
##	[8731]	146.58613052	352.08504436	194.51730330	-238.86254802	322.85338595
##	[8736]	-12.90412871	-32.61821014	125.93505095	149.61287310	261.23945914
##	[8741]	72.36101626	249.35734582	341.45991256	36.78861670	-211.80802895
##	[8746]	2.08754045	199.79760072	68.80124807	135.35485898	178.68104156
##	[8751]	14.16863152	109.62646159	204.27962349	254.57304650	268.20166421
##	[8756]	193.74247266	70.45721847	-225.70797915	325.35869094	626.06168709
##	[8761]	54.48415018	331.69575947	29.80633071	-190.00599013	4.61870614
##	[8766]	151.56821474	49.02620325	-130.31969683	-21.76509420	317.07265723
##	[8771]	279.06514222	347.31402660	312.11485089	-79.42510901	248.79597527
##	[8776]	414.22056917	30.18835217	346.79195533	212.62672595	39.11967196
##	[8781]	164.97706195	111.22951608	163.98394287	67.65276452	408.40003122
##	[8786]	355.76668796	218.45910209	452.12068561	441.28934529	27.41667424
##	[8791]	348.57534483	297.34383194	131.77569352	161.34439174	105.41711312
##	[8796]	407.07711836	-57.36702953	124.87970753	376.49500200	233.77895593
##	[8801]	459.63322139	129.52698993	241.09155776	235.20837936	35.70495323
##	[8806]	62.71728952	-12.72304064	-5.19069778	510.13887865	385.88089592
##	[8811]	-121.10105083	-72.11547566	-68.57030921	62.55490851	74.88553709
##	[8816]	163.17177624	176.88389426	112.58650396	206.39927624	-112.77313963
##	[8821]	156.84240263	232.54179073	196.19237949	278.06012416	383.33489466
##	[8826]	311.81405621	263.11819204	-199.85684331	139.97267396	114.87261299
##	[8831]	183.96434405	-12.39705955	131.55976488	198.89600180	107.02075219
##	[8836]	95.67867821	231.86645685	138.79079653	170.90910683	64.66683604
##	[8841]	157.42199259	318.73099127	379.70520604	-87.15794333	347.51108457
##	[8846]	3.66874953	-107.80897532	166.76834805	420.45091383	53.02236435
##	[8851]	171.16143681	140.81612245	-55.09894704	-83.86647923	68.07746862
##	[8856]	374.23847922	192.62280005	373.71046058	281.40602791	407.35670197
##	[8861]	287.62556851	358.91370358	-41.48334510	-40.30229251	66.23938803
##	[8866]	14.41613963	99.08574106	61.46179309	126.22644514	291.76696937
##	[8871]	390.73083175	100.22441422	362.55128413	256.09977639	110.81126555
##	[8876]	-111.85695811	202.08091620	205.83610557	-288.98328670	26.00583221
##	[8881]	126.16458094	99.71461794	3.99518523	-75.87785596	118.14600082
##	[8886]	84.90321091	-18.39217423	44.13731429	329.06583002	80.33660273
##	[8891]	314.01646438	45.95755763	244.87295201	292.11204199	-65.17406302
##	[8896]	144.04579269	25.35934903	357.54457712	122.32361281	281.41669008
##	[8901]	82.18906535	206.81306357	235.36875300	127.62892039	136.93834207
##	[8906]	196.53600768	87.40370721	14.49520478	334.42731131	294.86862823
##	[8911]	224.12505355	276.38693250	106.26373100	96.50716490	84.62443369
##	[8916]	67.19000657	75.00463696	150.06051047	269.58259951	-70.37110935
##	[8921]	237.75138250	313.69612008	44.52968959	223.31053894	-184.70526005
##	[8926]	332.27605778	85.17144384	29.30174068	377.51491432	410.99218224

##	[8931]	323.79209868	218.72714332	23.20729320	25.96809851	48.87041959
##	[8936]	299.48938649	12.85300075	219.33626191	453.01267936	237.56225378
##	[8941]	147.29936583	120.70071097	240.12247695	23.92614294	29.61416296
##	[8946]	-21.76743494	324.84647851	-9.60853003	104.94929072	210.81660697
##	[8951]	262.60279836	215.35000636	176.95065134	-94.77568904	117.59738158
##	[8956]	122.31963867	286.69926713	64.31450798	161.05435805	282.42943069
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##	[8966]	211.98460578	144.80589807	286.56533066	259.96993322	-115.21926744
##	[8971]	96.85185863	-79.52185347	298.18735022	-211.51963799	89.96717713
##	[8976]	233.93959047	6.46095690	160.32134484	-183.49382072	211.37619453
##	[8981]	206.71516082	-27.58481761	320.32930170	101.43817786	275.66100103
##	[8986]	197.16907561	300.08654132	160.73740452	197.19116338	128.11751586
##	[8991]	-26.32584218	119.63691022	-63.13559449	223.35086925	255.69185030
##	[8996]	415.11133862	53.38891454	126.98208976	-53.49459291	185.12028270
##	[9001]	118.97770762	178.16497434	574.93056331	300.88757632	22.96424282
##	[9006]	112.18523852	208.55927260	156.09961629	303.23755337	40.42673052
##	[9011]	-11.17884428	183.94910385	212.17721630	-39.49198908	539.01694099
##	[9016]	61.52427726	354.36599170	204.76654688	127.38856888	323.48375783
##	[9021]	634.32461394	183.43296336	257.56921697	-0.38223878	241.64041200
##	[9026]	97.14953936	451.69287658	-159.71919020	-244.76810710	259.44439976
##	[9031]	96.69063728	202.53357837	360.70041810	241.22676750	54.53838845
##	[9036]	-82.64447338	369.36147857	-179.46670327	238.73555214	226.67951588
##	[9041]	-65.80107769	7.48745162	15.59849914	44.75498661	281.53939841
##	[9046]	263.33252224	184.39000338	95.06613777	356.05151472	408.35288176
##	[9051]	134.25141215	281.96727264	341.81437298	-31.35651807	333.12579385
##	[9056]	291.54561891	229.35964317	151.25827104	289.49572529	172.40395946
##	[9061]	-59.97469036	339.58579434	116.33299174	-36.01548859	457.38861798
##	[9066]	44.37790406	-41.70265776	182.01282334	-4.22872372	-77.91796370
##	[9071]	341.19937327	-115.05055975	134.29121539	301.92279949	-174.34846263
##	[9076]	261.76633119	115.52212927	124.92868342	-24.06460060	57.99866209
##	[9081]	33.82621908	131.17582133	16.87972705	181.05338864	-45.70087197
##	[9086]	-122.76291723	224.34502982	171.35035890	13.88741606	347.35478267
##	[9091]	290.17974640	244.22120259	329.50382094	389.21970885	67.83396784
##	[9096]	183.68337263	167.31441320	95.21200602	134.13035389	18.63431790
##	[9101]	113.81820428	66.78644028	288.84008160	-315.29146075	260.48106557
##	[9106]	-40.52011267	87.91971250	98.81345029	543.41438189	29.32648347
##	[9111]	43.23275433	253.17847338	167.14437387	-119.90990314	8.13494675
##	[9116]	-179.62394512	215.06316339	343.65990512	94.07239733	11.21609480
##	[9121]	-73.83933444	355.26286921	51.29169006	107.84475305	-76.99896790
##	[9126]	132.42484050	-185.87416636	239.80796641	-86.61729583	88.52771770
##	[9131]	328.61570707	338.02847624	248.12165296	217.41107279	387.15493917
##	[9136]	342.16994013	12.40247438	145.97589186	176.12970324	52.03993281
##	[9141]	361.70555135	27.74592111	2.28814119	449.95335196	312.07327274
##	[9146]	-13.61478728	-134.86723218	75.49370035	17.96271892	184.79612450
##	[9151]	378.18079862	200.44007507	111.98156649	155.88263307	117.96687586
##	[9156]	-49.74379863	24.48348928	168.26590675	322.72585518	49.79847495
##	[9161]	267.54802407	329.62441748	310.47433051	359.08285176	276.71727011
##	[9166]	156.63538785	78.65171173	-9.80650647	187.41847832	477.67199227
##	[9171]	183.34439887	255.03286528	-8.15145254	277.97856132	296.42978007
##	[9176]	340.67615549	319.78904220	254.92067751	200.28149350	247.65806300
##	[9181]	390.68557081	113.51759978	95.91419610	62.82636551	147.05639429
##	[9186]	189.03027007	77.60352381	124.00194705	358.45281004	57.48758263
##	[9191]	55.53847484	288.16927213	321.90036428	57.19207649	-38.65909734
##	[9196]	174.25860839	28.67205642	-4.78608823	318.51986206	367.35947541

##	[9201]	435.54628648	-255.39585420	136.35891495	378.11200838	103.96756480
##	[9206]	-96.91105023	334.57920775	196.39483705	308.63357019	269.78359392
##	[9211]	87.82398801	358.18404818	174.45718450	232.64938296	428.89850478
##	[9216]	-81.80768375	78.54346298	268.22588414	72.42477124	-121.23165641
##	[9221]	-38.97223345	313.90749479	137.56004568	165.78974314	197.36258800
##	[9226]	428.06171563	81.35718999	155.89704699	345.61755800	236.92087416
##	[9231]	22.71365144	-94.28917897	273.04257465	138.55452795	264.96824884
##	[9236]	-9.33958930	391.77676716	198.84446372	309.17691415	65.07658987
##	[9241]	-104.37000441	201.28918080	-112.14564238	84.48634690	470.22213972
##	[9246]	139.20262164	165.12188964	383.84723127	144.77251153	278.08668619
##	[9251]	136.67980543	262.85581187	165.77342039	326.46626232	-66.52042822
##	[9256]	259.19139252	81.58491157	12.61100142	193.22819505	9.68372379
##	[9261]	51.06372432	269.46376261	-45.95494835	319.15971780	192.06810712
##	[9266]	269.72291868	157.45695903	19.69654062	15.88074014	138.65477468
##	[9271]	-40.14947714	125.63779370	124.13273424	537.79631207	173.48885061
##	[9276]	-104.75791708	170.25606654	210.97058937	46.33678204	107.09637389
##	[9281]	-29.03034497	293.23671279	306.57791951	86.06430780	248.68413665
##	[9286]	234.59026594	166.51996409	383.41197672	106.76576096	96.36669306
##	[9291]	-149.58221212	106.16087308	201.64473412	61.65986536	-81.30479557
##	[9296]	84.60325820	201.16657533	52.26236353	-11.17098854	383.74287459
##	[9301]	261.92852525	323.44316784	70.51503616	187.94520071	344.82772533
##	[9306]	73.50397545	-124.39598499	36.58543227	247.25025602	224.71174440
##	[9311]	164.75979266	183.30535574	387.21048778	-30.81876660	429.90979235
##	[9316]	240.01797736	-17.68697990	-40.81126834	182.13694146	82.33808000
##	[9321]	243.03729120	361.95222831	254.78701008	-140.14569263	-214.08185533
##	[9326]	404.70515466	-20.49213555	128.33841893	158.86344414	111.55536281
##	[9331]	256.43151968	-19.81685687	13.14216761	303.39330288	-57.45191031
##	[9336]	97.01177413	157.29688361	168.21821300	271.91316326	463.95442641
##	[9341]	243.59976653	93.92450030	188.54245073	23.76863346	95.82665407
##	[9346]	146.81885071	134.91904924	232.58569392	129.96475504	293.97276578
##	[9351]	526.85404509	193.15303975	28.91318110	-41.73579680	356.29065984
##	[9356]	68.99209863	109.56154902	249.65710963	133.88346431	179.43005556
##	[9361]	220.19579763	336.80801102	-193.25078963	384.59629307	211.14978403
##	[9366]	136.37529520	-35.42825345	148.24571089	250.78050075	281.73651798
##	[9371]	259.45665669	126.58874552	98.47093039	293.29269400	373.28835307
##	[9376]	361.16783200	214.95760338	139.92505457	276.33596339	120.23668992
##	[9381]	167.32041382	339.96156551	155.81562665	60.23659523	319.10681003
##	[9386]	98.96471756	-28.03327854	153.86163712	124.71672607	262.71295650
##	[9391]	381.41884564	47.93232303	390.53548915	58.19291802	230.61915188
##	[9396]	97.50068704	-41.53775346	277.08500335	494.57663813	248.89000683
##	[9401]	-133.54259641	281.59436201	137.77427733	-154.97946442	-89.75372507
##	[9406]	33.67043219	44.26904820	95.46441280	-33.54630630	242.95425171
##	[9411]	173.46383765	63.95095313	378.14431613	339.17650111	442.31775661
##	[9416]	404.63553462	-68.75344925	538.52502353	95.19652253	75.23565329
##	[9421]	134.06414784	-16.31908974	113.72291113	279.55509276	358.38390786
##	[9426]	23.16126401	379.16952295	203.13991633	173.73625283	148.93334725
##	[9431]	186.83747277	303.01561809	-61.75158697	216.11940378	441.06997637
##	[9436]	448.32300355	-17.86276462	107.62664996	119.09146250	271.99687773
##	[9441]	304.52317603	314.74501146	316.70810301	354.32267711	-101.71902838
##	[9446]	307.80123615	145.76744084	93.70532881	430.29611538	-9.23960989
##	[9451]	-66.96848572	326.25746094	291.45666164	132.86260104	228.17328619
##	[9456]	124.95920163	107.36719153	152.69869254	106.43743849	272.47907774
##	[9461]	351.18914301	220.77877127	66.36267931	-7.79980308	166.85258106
##	[9466]	107.21240208	68.40520406	228.01642329	117.70382644	86.96157285

##	[9471]	324.49313798	174.69386663	198.49579814	253.02735231	145.50552469
##	[9476]	-95.70431384	95.96808672	435.00089543	481.84703005	-14.81348853
##	[9481]	305.11378906	143.84557992	237.98668802	85.67735580	156.11828419
##	[9486]	275.68837380	113.39801656	5.32157326	195.13239614	127.58722481
##	[9491]	67.22019436	153.13212296	224.23067652	514.66068810	-175.44194387
##	[9496]	249.17773207	-26.19995422	145.49617845	416.30975838	3.93514688
##	[9501]	-75.83392500	28.03363934	193.93937167	552.40742542	234.58426770
##	[9506]	-186.71555917	0.24946974	254.65933012	58.09911394	41.75388306
##	[9511]	-129.22527271	5.74986067	178.40804484	183.77853829	181.14798971
##	[9516]	37.31322891	154.36241839	377.56373951	83.56179411	99.33933362
##	[9521]	-10.64913999	-2.86959115	197.26204671	-16.15023309	90.63232079
##	[9526]	353.68113596	348.43861050	206.02741913	183.12717084	-21.78613280
##	[9531]	339.77668552	-66.68996882	333.35140286	1.60591849	-48.40995660
##	[9536]	277.78093593	70.48708580	44.00755445	202.98571818	96.87035130
##	[9541]	2.31994622	-54.93557260	62.71390558	269.63544350	294.58825063
##	[9546]	264.75252456	173.75861867	210.82218638	-131.71784312	-87.17000845
##	[9551]	144.42508295	154.06112993	20.27152711	391.92776904	144.39458138
##	[9556]	169.41335639	194.31964884	16.20235663	175.00713391	264.49222171
##	[9561]	260.82005067	294.66716621	496.97876955	-10.88318523	2.18254971
##	[9566]	13.95990033	145.32760001	-45.80491909	196.60545179	168.61431099
##	[9571]	-83.32580751	450.65099667	39.80824212	97.62637657	459.82341462
##	[9576]	85.37801657	368.68669850	278.22453602	-51.02251824	282.28323383
##	[9581]	-46.20742558	136.73636203	113.27348236	168.79398559	185.23906782
##	[9586]	262.63496501	311.47641606	170.65093148	-185.67012931	260.55307429
##	[9591]	116.59660861	252.07272025	187.28675992	70.87138262	-25.89671559
##	[9596]	408.44384227	332.92495132	210.29464561	213.80556272	39.62092084
##	[9601]	25.90563046	13.12877009	320.19115673	423.01159551	228.27830848
##	[9606]	221.73485960	272.00856521	110.52989464	-3.26976189	131.99315111
##	[9611]	277.11760122	159.02010861	-82.52606863	230.68436464	178.90112398
##	[9616]	148.26385297	341.81345398	105.38777819	-54.01864362	167.28106963
##	[9621]	244.17493475	97.15119887	342.48358751	93.62932963	-58.20537627
##	[9626]	225.24165957	-212.15035265	120.50886278	-160.75520205	74.71738144
##	[9631]	60.68925270	323.93076004	-49.35916756	580.36094034	-154.56859431
##	[9636]	125.49576685	225.16597530	-76.34808913	85.82641487	205.19417160
##	[9641]	399.69302181	429.62403798	223.12878179	296.53370267	172.24364888
##	[9646]	92.50862303	441.70586748	190.03890945	168.59632420	233.71322236
##	[9651]	13.63921406	420.19568179	188.99848982	-262.29485112	182.75772793
##	[9656]	307.26113416	104.54243228	372.64032837	92.37849748	138.00675888
##	[9661]	92.79415061	120.56060322	359.39245938	90.01153276	-94.76182109
##	[9666]	287.97991664	356.59011440	235.64984610	33.64839009	169.97208136
##	[9671]	404.14860613	-25.68714401	412.81545671	335.60107505	182.45374772
##	[9676]	84.61571473	278.80958180	-38.29878095	19.47173526	394.18688242
##	[9681]	118.91186215	118.87354107	30.05404706	337.39151764	188.41047096
##	[9686]	343.74476339	457.19385592	-23.78468288	191.33541713	-4.28626029
##	[9691]	221.90880349	138.25016523	64.24502510	331.29367569	124.09669759
##	[9696]	-173.23520477	-34.54112431	116.79195897	84.35587453	170.91788152
##	[9701]	128.14925014	423.04876554	-115.13387914	87.23288473	91.90884911
##	[9706]	266.56655741	85.85261052	495.91983650	96.32556670	194.21099600
##	[9711]	401.28125436	268.26833529	152.76307360	235.24066012	-87.92769245
##	[9716]	-180.80509688	-188.92413750	496.28615552	138.42198738	48.57033588
##	[9721]	279.09331012	317.84615259	117.47881540	-91.58234739	-60.52125244
##	[9726]	369.10353773	21.40100468	432.48459272	280.88799053	138.43939779
##	[9731]	349.06632642	-56.24679359	111.74094975	350.25789568	23.42549037
##	[9736]	1.44555950	53.13783307	406.84051787	430.48635309	-10.05021906

##	[9741]	187.01279763	313.76019212	216.14478519	197.25338930	162.71143295
##	[9746]	87.17118363	378.87579738	209.94692108	50.63502223	-97.43254491
##	[9751]	-37.08429712	371.96485519	139.83046365	266.64414587	-0.07988424
##	[9756]	270.38569577	289.32358099	449.37232456	-107.61293516	65.36536618
##	[9761]	139.56789704	-97.26656363	-146.51926054	451.17018052	222.57563677
##	[9766]	277.85237598	-155.57514452	421.22189253	177.73902786	507.80960386
##	[9771]	276.14067258	436.62275407	165.98082522	51.97807911	-54.85402519
##	[9776]	11.95531046	37.74872021	553.97435204	-46.49377740	83.61772703
##	[9781]	280.25448839	200.90399430	140.88966174	380.43005495	324.81562180
##	[9786]	131.76495143	230.38873561	218.32048845	11.79875601	89.87521863
##	[9791]	159.41999055	126.59859097	72.06342928	0.18844390	160.26294292
##	[9796]	31.40982548	168.20220741	92.11548572	-48.78291498	104.77132969
##	[9801]	176.21758975	183.70187596	152.40730732	474.34656451	-207.78713432
##	[9806]	390.14255796	-7.70856287	167.73552810	58.07112030	66.59880057
##	[9811]	355.65405039	110.63436405	32.18519700	252.40665516	46.52204382
##	[9816]	-54.09198158	247.46205638	-3.87949207	24.72411578	274.71010122
##	[9821]	196.00760274	49.21741984	-106.86834669	264.90078578	319.35401985
##	[9826]	21.86064665	-95.87911699	360.05843936	288.87851770	289.87626017
##	[9831]	-73.30890702	226.59538052	81.42727401	390.99970728	167.37592881
##	[9836]	288.64268228	139.68317734	473.65925564	-73.89578346	-22.30905391
##	[9841]	-10.92293129	198.78988977	-9.34221358	277.59281347	113.51646577
##	[9846]	174.36552290	-82.13552077	175.71956436	97.93226348	135.91109311
##	[9851]	366.43827609	-74.52770727	35.97003030	347.20946737	245.65857871
##	[9856]	64.80615026	254.93069130	308.50950141	98.71525040	268.75842117
##	[9861]	280.45482283	-78.06800607	46.97099477	320.64491015	69.49384340
##	[9866]	161.19757245	42.73652989	177.73745206	242.22686850	61.75067536
##	[9871]	68.66438854	137.75721728	-18.73757176	267.31606673	134.93615275
##	[9876]	254.35659521	236.85941284	14.50713910	-7.12043034	145.74420686
##	[9881]	-1.86765916	44.77910198	322.99882638	335.19124111	453.77165897
##	[9886]	200.18006318	149.76465521	127.11467272	144.69693514	-123.42863255
##	[9891]	112.19857206	289.11593653	99.22906199	-26.73799365	26.94444858
##	[9896]	83.50761896	-51.28552452	190.43357749	236.22132301	223.58816721
##	[9901]	322.68330570	230.28263529	124.53361056	205.97335111	37.68611910
##	[9906]	-30.14027288	125.89895573	76.30696525	272.54134407	9.80249637
##	[9911]	73.44185815	577.81846298	-17.53585763	244.07618999	265.25749585
##	[9916]	339.63926280	307.19669096	80.81585731	173.83299010	-135.74413699
##	[9921]	253.31047878	12.09714597	120.34929420	606.26736427	176.60325781
##	[9926]	400.50260793	59.31060916	-137.21154044	-182.25044333	215.82638135
##	[9931]	313.45482573	47.02221267	506.44721547	204.59115281	133.14247085
##	[9936]	111.31911733	519.35258788	167.32758855	-37.99892280	36.21477955
##	[9941]	135.85007552	311.40690347	124.49043861	251.55439832	-295.08539084
##	[9946]	259.95802705	402.73660347	239.98434486	-139.71046777	-62.14880225
##	[9951]	231.09273715	96.78032375	15.24126776	-60.85619482	189.53407715
##	[9956]	-124.38272320	161.25670232	324.72260914	266.52534568	385.91374407
##	[9961]	144.42784627	35.87829722	124.44116367	217.14168866	353.93422844
##	[9966]	226.93529838	16.80043873	238.26086838	72.03695034	-89.47291141
##	[9971]	-18.71501099	344.23838915	189.69160123	45.95496480	200.70223221
##	[9976]	156.39493194	345.39332108	257.05433325	588.45464860	-135.56182157
##	[9981]	114.25587840	169.00605396	145.86418608	79.77941067	181.43538477
##	[9986]	288.99950693	64.09026014	-12.62657407	97.75114304	165.61243113
##	[9991]	-27.21430442	164.17714219	408.01338085	483.68368248	-57.57593878
##	[9996]	259.53760974	392.84230395	76.37284342	106.38004986	204.82623867

Q2 (ii)

```
# Code for Question 2 part 2
sample_size=100
unif_sample=sample(uniform_heights,size=sample_size)
pois_sample=sample(poisson_heights,size=sample_size)
norm_sample=sample(normal_heights,size=sample_size)

sample_mean_unif=mean(unif_sample)
sample_mean_pois=mean(pois_sample)
sample_mean_norm=mean(norm_sample)

cat("Sample Mean of Uniform Data:", sample_mean_unif, "\n")
```

```
## Sample Mean of Uniform Data: 148.394
```

```
cat("Sample Mean of Poisson Data:", sample_mean_pois, "\n")
```

```
## Sample Mean of Poisson Data: 159.56
```

```
cat("Sample Mean of Normal Data:", sample_mean_norm, "\n")
```

```
## Sample Mean of Normal Data: 147.5686
```

Q2 (iii)

```
# Code for Question 2 part 3
sample_size <- 100
simulations <- 1000

sample_means_uniform <- numeric(simulations)

for (i in 1:simulations) {
  uniform_sample <- sample(uniform_heights, size = sample_size)
  sample_means_uniform[i] <- mean(uniform_sample)
}

sample_means_poisson <- numeric(simulations)

for (i in 1:simulations) {
  poisson_sample <- sample(poisson_heights, size = sample_size)
  sample_means_poisson[i] <- mean(poisson_sample)
}

sample_means_normal <- numeric(simulations)

for (i in 1:simulations) {
  normal_sample <- sample(normal_heights, size = sample_size)
```

```

sample_means_normal[i] <- mean(normal_sample)
}

```

```
sample_means_uniform
```

```

##      [1] 188.0194 175.6548 169.2397 159.6952 161.7848 175.3703 155.0540 148.3668
##      [9] 166.0133 149.8930 164.1832 163.6957 170.3248 164.3178 147.8223 166.4750
##     [17] 162.6853 147.3765 159.9895 168.4139 157.9835 166.1259 147.4567 158.2641
##     [25] 161.9196 154.6841 166.4966 145.7918 145.5432 162.5739 177.3003 161.2618
##     [33] 156.3699 146.6878 160.0368 165.1968 152.9012 153.1487 164.2075 166.0761
##     [41] 153.2535 168.3533 160.6390 160.7875 164.8142 167.2628 153.3666 157.1784
##     [49] 157.8020 151.2744 158.4172 182.5083 154.2960 158.0921 144.9080 179.5248
##     [57] 167.0575 165.8718 172.4135 162.7381 162.3051 150.5850 157.5970 146.1568
##     [65] 154.7697 170.2526 151.0884 165.6828 158.6285 167.9801 162.9457 167.6578
##     [73] 176.7706 149.8010 163.2820 146.8358 169.7454 162.2244 152.0472 156.7732
##     [81] 147.2464 150.9652 155.5460 158.7247 166.1814 155.8717 165.1950 157.7167
##     [89] 171.4505 152.7042 169.5978 175.2223 150.2204 157.5749 172.3015 173.2020
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## [25] 171.6070 170.1880 179.8237 184.6608 169.5799 153.2278 159.3763 172.9005
## [33] 181.0991 154.5448 139.3068 128.9303 182.7957 139.0055 163.3710 149.0118
## [41] 151.5196 165.1731 175.5296 136.6779 145.7463 155.4024 164.7168 161.1698
## [49] 162.5825 185.7234 149.7898 163.3363 166.6404 158.0419 130.0765 144.4458
## [57] 142.2366 165.5969 155.9917 154.3232 162.7046 178.4777 163.2429 142.0317
## [65] 130.1385 142.4691 160.0636 169.2355 165.4294 146.0498 134.9335 165.2820
## [73] 161.4704 164.2659 149.9956 169.4483 161.5835 170.8368 180.1112 172.0708
## [81] 156.5042 163.7540 158.6006 168.3350 154.0743 179.2741 147.9395 182.0129
## [89] 152.6935 167.6416 152.7587 179.7346 142.5210 160.9039 141.5137 123.9112
## [97] 158.2076 198.2929 164.8150 146.5613 170.5979 147.5108 183.6640 170.8704
## [105] 174.0434 167.5959 178.4171 173.6930 131.5106 178.8038 168.5851 155.9091
## [113] 141.3783 165.6896 142.4028 168.1201 173.0859 137.7599 149.3152 150.9368
## [121] 184.8428 150.9781 161.7393 131.4505 183.3642 170.3684 162.5748 156.6443
## [129] 170.0918 140.8048 155.6234 164.6800 122.7244 176.1258 155.8556 133.1081
## [137] 161.8061 176.1028 150.9405 166.7895 154.9484 143.6888 153.0510 130.5255
## [145] 144.4311 173.2681 160.2279 157.8747 156.8649 177.3328 144.7238 144.9758
## [153] 153.9071 151.7420 156.3442 183.4380 130.7947 154.3698 182.0356 166.4236
## [161] 170.9677 148.6183 172.6001 157.5071 159.6770 115.0428 182.3968 191.2350
## [169] 153.3943 166.3392 172.2709 135.6239 151.2829 160.2420 157.5725 173.2511
## [177] 174.3933 144.0510 181.4096 177.6407 168.6440 153.1515 166.0178 146.8832
## [185] 173.7246 173.9224 156.3951 147.8598 173.8995 162.1700 155.3998 162.3209
## [193] 159.1960 167.5967 175.8703 150.7229 178.8591 165.3632 152.9266 144.3237
## [201] 153.5445 162.7318 152.6903 139.0136 165.7957 161.4203 122.4801 131.8671
## [209] 164.6702 168.5424 156.8397 170.6688 161.6141 165.6121 158.0031 159.9356
## [217] 168.5481 165.0185 165.4436 175.2269 175.1385 124.0815 163.0444 167.0482
## [225] 164.8655 149.4555 165.3921 169.1339 161.1374 137.0822 140.8384 163.8258
## [233] 165.9620 137.1112 142.2618 179.4618 149.2136 139.4536 161.5886 165.4003
## [241] 166.5090 160.6613 153.5514 155.7304 156.6198 163.4696 161.8629 137.8447
## [249] 148.3301 161.2608 172.6863 157.7111 162.6454 156.8523 120.6121 151.9562
## [257] 178.0862 145.6077 161.8300 167.7043 178.3595 150.7094 170.0924 165.3556
```

[265] 153.8948 161.8517 156.5282 154.6283 162.2863 151.3598 138.0951 148.5181
 ## [273] 139.4023 140.7172 175.0916 150.4566 167.6279 141.8854 145.1656 154.7447
 ## [281] 173.2405 146.0293 161.4468 165.9559 121.2331 171.0247 137.3529 155.6456
 ## [289] 143.5706 147.0748 171.1414 177.2027 175.8848 161.7489 158.6350 158.3975
 ## [297] 163.3593 133.4851 144.1303 160.2707 144.9879 156.6572 137.0853 122.2318
 ## [305] 159.9441 139.9981 166.0244 153.3417 141.9538 173.9031 170.8176 157.6467
 ## [313] 169.7046 165.1533 150.7961 188.6520 153.6178 138.5231 161.2294 164.6909
 ## [321] 142.7319 142.8327 124.9663 162.7699 155.2011 171.7037 149.0247 147.1944
 ## [329] 130.3113 146.7720 172.7505 157.4263 155.8816 171.7795 170.1140 159.2788
 ## [337] 151.2246 173.7304 146.0626 151.6838 142.0220 168.1069 171.0221 202.5448
 ## [345] 167.4352 168.6484 182.9818 180.2258 140.9011 172.3337 161.4034 149.5913
 ## [353] 156.5205 162.3824 154.4125 140.9408 152.2935 120.6917 144.5819 104.8087
 ## [361] 181.5681 166.9981 165.3455 159.0676 202.6909 145.7861 199.5351 169.1420
 ## [369] 167.3393 167.7998 144.4955 154.7511 146.9652 174.0964 137.8065 181.4579
 ## [377] 154.0284 169.1833 148.5623 207.5968 150.4765 163.4736 158.0820 170.7879
 ## [385] 172.6753 147.4431 165.3329 149.7850 122.9097 142.5364 142.4525 146.2197
 ## [393] 178.0519 136.0426 166.7434 143.0120 126.2223 158.8097 167.8162 151.5672
 ## [401] 162.5050 114.8936 168.4254 164.7320 164.0886 159.1888 138.2108 175.9481
 ## [409] 167.4423 155.1540 146.0307 160.6422 154.1643 188.7448 147.8224 155.1656
 ## [417] 164.0863 171.0550 143.4475 146.4358 163.6883 172.9345 134.6023 164.1524
 ## [425] 172.1629 154.6684 152.6342 143.8708 169.4197 143.4115 159.6200 172.7692
 ## [433] 147.7384 164.0512 136.9710 173.7067 150.5626 150.8641 172.2277 165.9263
 ## [441] 142.6482 118.7514 179.0137 202.8875 134.4113 171.8333 172.0022 149.9026
 ## [449] 161.9063 174.9788 156.5282 151.7975 171.5674 169.8591 138.6910 190.4781
 ## [457] 153.6039 159.6915 145.0014 145.0332 164.4394 127.8067 157.7988 176.1107
 ## [465] 149.6291 153.6632 174.2544 159.7508 128.1668 178.3759 143.9648 156.1537
 ## [473] 168.0449 170.1316 146.7537 190.9072 156.8828 154.0136 169.8206 140.0655
 ## [481] 194.1914 128.0315 128.5923 140.7292 162.5581 154.0558 158.9892 143.3979
 ## [489] 160.2262 152.6269 144.7915 156.7291 143.5427 156.8747 158.0384 134.5742
 ## [497] 144.3439 141.3919 165.7791 181.8331 167.8892 178.0680 148.4997 137.6996
 ## [505] 149.4209 136.6097 166.0546 162.4587 142.1112 145.3176 139.4025 175.2170
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 ## [521] 158.3389 127.2476 168.3612 143.7310 162.1770 178.0584 156.7275 142.7861
 ## [529] 170.9804 150.6441 141.2000 178.4897 154.0703 145.4182 145.1027 161.9173
 ## [537] 134.9834 136.6400 182.6410 182.9033 172.5960 173.0581 156.2105 162.0199
 ## [545] 127.6741 128.2695 162.3849 180.0267 136.2459 170.4245 169.1686 148.7981
 ## [553] 154.6288 147.6845 161.6580 180.5004 138.3417 147.4178 132.8090 157.8669
 ## [561] 110.7651 163.5004 151.6969 151.0887 197.3897 179.2568 137.2472 129.2810
 ## [569] 189.4942 165.5452 158.1043 158.0586 147.4587 102.7478 161.0150 147.9260
 ## [577] 147.7209 140.7482 159.4688 154.2049 130.4957 208.6735 170.9724 155.0219
 ## [585] 164.9895 177.8515 159.0695 152.7530 170.9300 129.9369 150.0556 162.7479
 ## [593] 155.5048 151.8344 172.8559 132.8744 166.1931 186.8734 151.8053 179.6166
 ## [601] 146.7332 157.5594 146.7636 176.5529 172.1427 154.5357 124.8241 142.9081
 ## [609] 166.5958 183.8916 179.2746 157.5182 157.1725 181.4085 176.6157 157.1199
 ## [617] 141.4465 164.6926 169.8177 139.6074 158.4435 140.2963 130.4364 156.4426
 ## [625] 174.8162 158.3788 156.6602 192.5261 152.6894 149.4155 141.7584 142.6244
 ## [633] 174.5920 121.0106 164.3992 153.8427 166.3016 131.7981 171.7711 171.4486
 ## [641] 138.4988 171.6133 124.9215 173.1498 134.8696 152.9602 162.5711 179.1248
 ## [649] 152.1669 191.3498 141.0461 169.4064 168.1917 154.1144 139.9441 149.2756
 ## [657] 165.8492 106.6927 147.1409 184.7763 149.3495 173.7839 181.1188 129.4977
 ## [665] 132.3241 147.0007 145.7199 118.4245 146.6498 186.4808 176.4145 145.1315
 ## [673] 145.7558 175.9317 138.9641 140.0556 156.9554 162.7636 152.9389 156.3729
 ## [681] 143.8151 142.1595 157.9558 139.4180 156.3249 174.2812 170.7632 160.8871
 ## [689] 153.0539 170.7471 171.7306 183.6332 142.3598 144.8546 123.8106 163.3703

```
## [697] 136.9995 160.9528 139.0029 133.6584 152.9636 175.9459 172.5875 153.0649
## [705] 165.1440 168.3676 147.2642 154.5627 153.5995 156.9609 149.5959 136.9820
## [713] 138.7667 123.7040 162.3743 150.8933 150.5065 160.6113 167.2897 167.5454
## [721] 166.6913 160.1259 133.3245 172.2932 153.1408 175.9274 189.4941 159.0171
## [729] 184.7965 159.0043 156.4725 148.2161 146.1926 139.1328 163.2455 155.6354
## [737] 158.9794 167.1573 163.6956 163.4408 166.5752 147.9782 134.5568 116.7345
## [745] 171.8799 184.5037 173.1248 154.1741 127.6825 135.2845 176.3423 151.1040
## [753] 177.5154 154.0369 164.3412 161.6516 182.4113 109.7964 162.1907 160.7093
## [761] 162.9791 140.0608 149.8527 154.8981 162.4861 160.0232 139.1339 167.1305
## [769] 159.5326 157.6675 144.6376 189.2165 155.1488 143.1823 144.4207 161.3085
## [777] 143.1525 174.1796 144.5687 177.8686 160.7649 169.7782 147.8130 187.0104
## [785] 172.4558 159.6626 191.2319 128.1869 163.9109 124.1941 131.7246 128.0068
## [793] 164.1358 161.3580 137.2924 166.5615 153.4334 155.4093 162.9737 150.6377
## [801] 150.4445 149.4690 150.4615 155.4797 191.6976 176.7035 143.0619 163.0536
## [809] 157.2806 192.0604 157.6503 145.3505 149.9417 156.7392 152.4231 157.4679
## [817] 139.5116 146.0863 163.2144 161.1678 127.7567 142.7510 181.4720 175.8308
## [825] 157.9831 132.0216 143.9442 142.6457 164.2507 152.5829 190.5049 147.5908
## [833] 176.4766 180.9010 187.1129 162.2525 151.6646 144.2681 156.0553 134.9875
## [841] 166.6362 149.7246 121.0912 128.6656 181.7147 157.4314 163.8094 145.4429
## [849] 158.2594 142.1485 147.7903 147.1194 139.3402 162.4403 141.3927 170.2681
## [857] 147.2049 149.8494 162.8018 186.3149 154.1790 166.5240 168.7955 110.7583
## [865] 164.1409 162.7763 144.0565 152.2749 130.0970 152.8463 159.4247 171.2161
## [873] 147.5880 144.9650 135.5108 195.0749 137.4468 155.9577 152.1180 123.8502
## [881] 171.9961 158.7153 149.3139 166.1666 155.3656 178.5542 167.9533 155.9815
## [889] 173.6754 156.0606 184.2699 169.3360 164.4135 166.8300 151.1005 122.0444
## [897] 149.8608 141.9339 159.9778 167.7918 167.3600 164.9016 196.0745 146.1515
## [905] 163.6547 158.5915 179.5186 148.7484 159.5348 151.9071 146.0801 150.0393
## [913] 136.8798 135.1514 163.1413 151.1933 133.2344 165.3604 131.4533 157.2623
## [921] 140.2366 145.4023 142.5012 152.1931 127.1143 156.0457 170.3446 152.1305
## [929] 146.3860 147.2594 153.7889 191.0751 179.9611 160.3634 161.3232 139.1207
## [937] 153.1915 145.1452 162.8062 164.4576 170.2976 184.8107 180.1279 185.9232
## [945] 154.1958 160.2971 145.6680 188.2025 129.5069 169.1846 151.0546 161.7534
## [953] 157.0035 131.8899 138.3252 158.1022 142.5211 138.2042 144.1442 168.1573
## [961] 168.2559 155.5277 176.8636 136.1573 181.1548 139.8586 161.4097 146.1876
## [969] 172.3329 162.3611 160.0351 150.0863 145.7130 157.4654 169.1096 156.8778
## [977] 160.1300 182.1301 142.5093 156.0292 135.2128 152.1290 182.3476 117.3512
## [985] 184.8782 162.8480 131.8808 157.1336 141.0020 131.1337 149.2186 143.6749
## [993] 157.6568 164.2203 152.5763 147.1900 168.9198 146.3585 161.7180 148.3704
```

Q2 (iv)

```
# Code for Question 2 part 4
population_mean_uniform <- mean(uniform_heights)
population_mean_poisson <- mean(poisson_heights)
population_mean_normal <- mean(normal_heights)

# Standard Error for mean is given by sigma/root(n)

se_uniform <- sqrt(var(uniform_heights) / sample_size)
se_poisson <- sqrt(var(poisson_heights) / sample_size)
se_normal <- sqrt(var(normal_heights) / sample_size)
```

```
cat("Population Mean of Uniform Data:", population_mean_uniform, "\n")
```

```
## Population Mean of Uniform Data: 159.2158
```

```
cat("Population Mean of Poisson Data:", population_mean_poisson, "\n")
```

```
## Population Mean of Poisson Data: 159.917
```

```
cat("Population Mean of Normal Data:", population_mean_normal, "\n")
```

```
## Population Mean of Normal Data: 157.0435
```

```
cat("\n")
```

```
cat("Standard Error of Uniform Data:", se_uniform, "\n")
```

```
## Standard Error of Uniform Data: 9.174199
```

```
cat("Standard Error of Poisson Data:", se_poisson, "\n")
```

```
## Standard Error of Poisson Data: 1.26688
```

```
cat("Standard Error of Normal Data:", se_normal, "\n")
```

```
## Standard Error of Normal Data: 16.02509
```

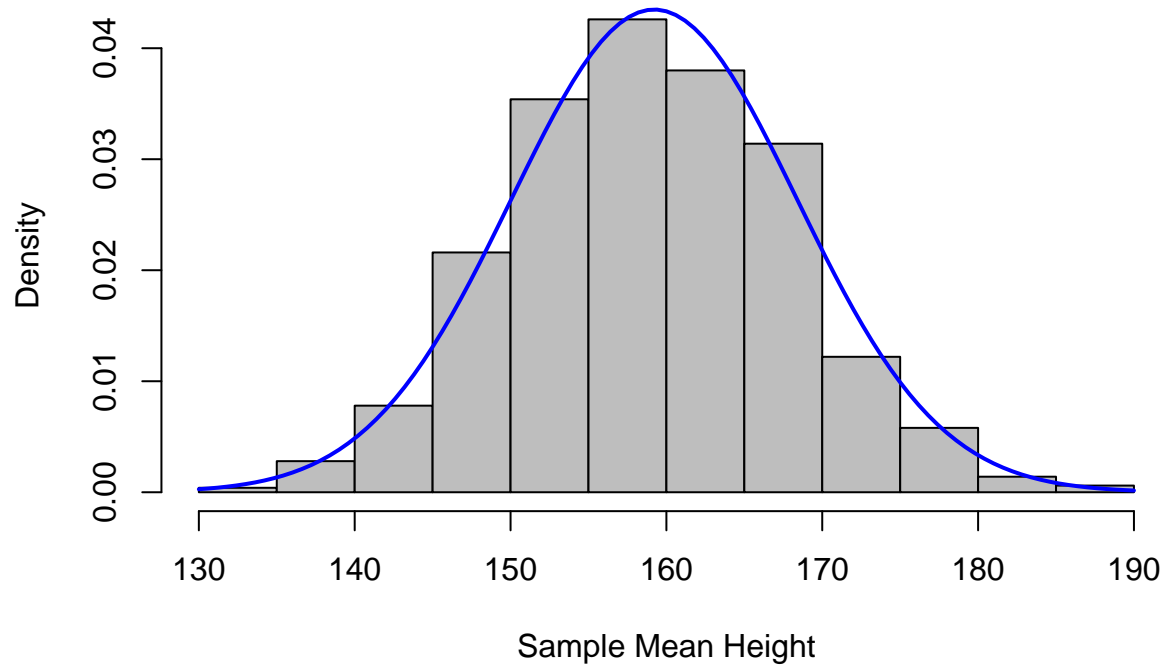
Q2 (v)

```
# Code for Question 2 part 5 (1)
```

```
hist(sample_means_uniform, main = "Histogram of Sample Means (Uniform Distribution)", xlab = "Sample Mea
```

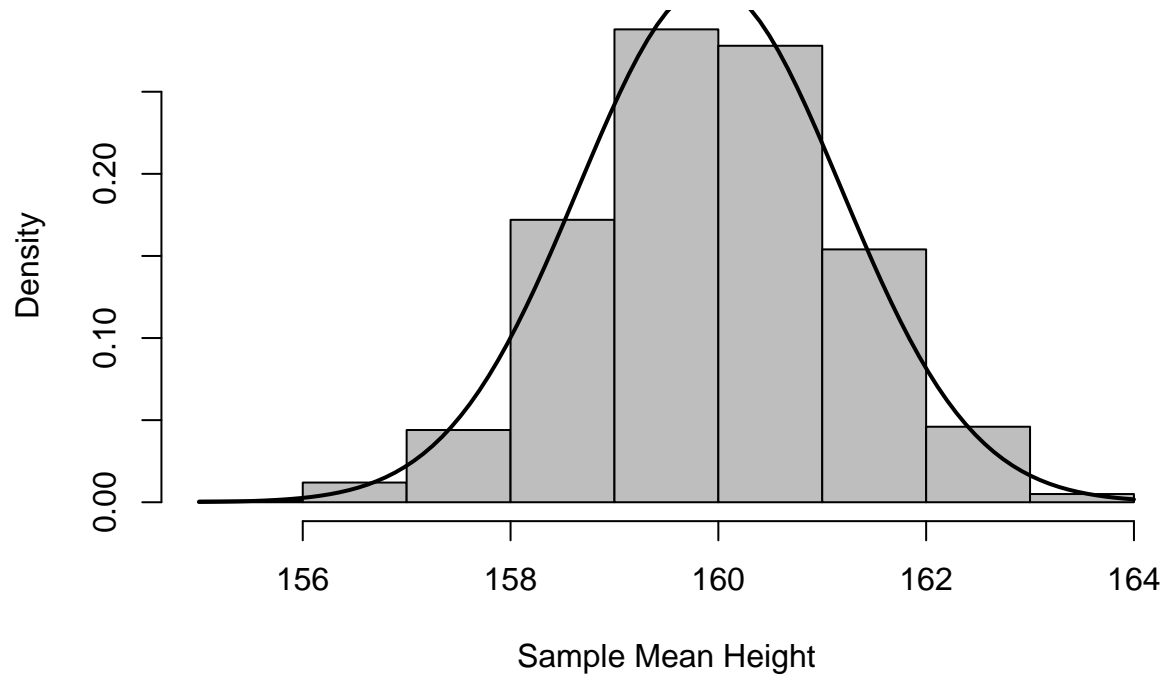
```
curve(dnorm(x, mean = population_mean_uniform, sd = se_uniform), add = TRUE, col = "blue", lwd = 2)
```

Histogram of Sample Means (Uniform Distribution)



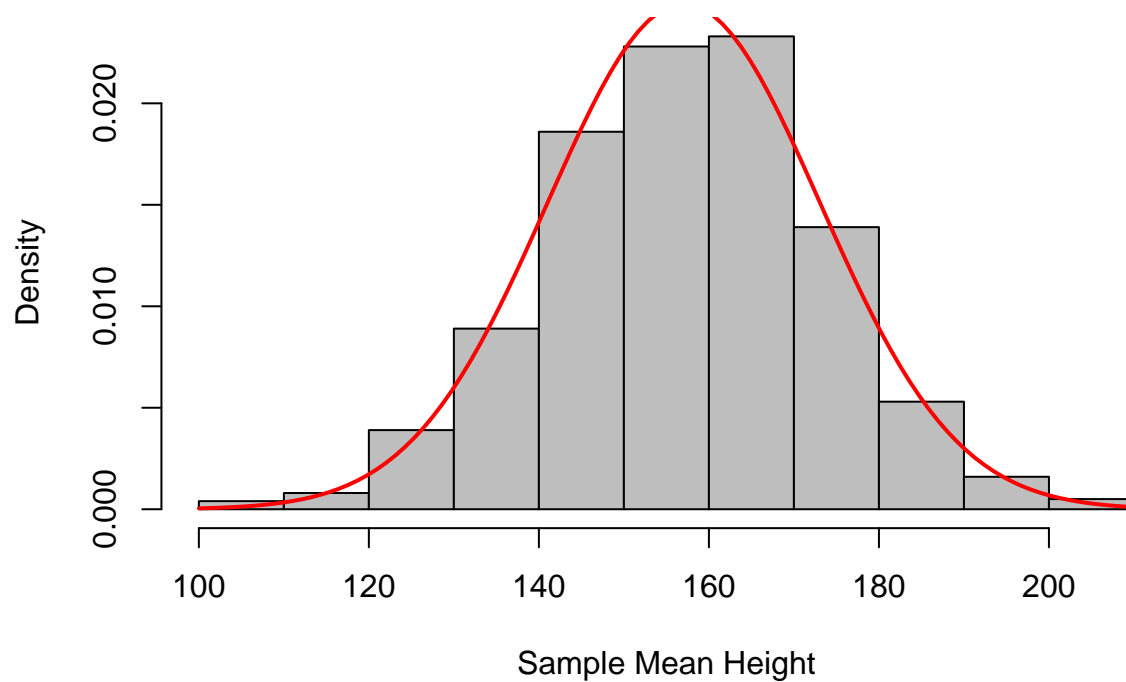
```
# Code for Question 2 part 5 (2)
hist(sample_means_poisson, main = "Histogram of Sample Means (Poisson Distribution)", xlab = "Sample Mean Height", ylab = "Density", col = "gray", lwd = 2)
curve(dnorm(x, mean = population_mean_poisson, sd = se_poisson), add = TRUE, col = "black", lwd = 2)
```

Histogram of Sample Means (Poisson Distribution)



```
# Code for Question 2 part 5 (3)
hist(sample_means_normal, main = "Histogram of Sample Means (Normal Distribution)", xlab = "Sample Mean Height", ylab = "Density", col = "gray", lwd = 2)
curve(dnorm(x, mean = population_mean_normal, sd = se_normal), add = TRUE, col = "red", lwd = 2)
```

Histogram of Sample Means (Normal Distribution)



Q2 (vi)

Remark for Question 2 part 6

#The Central Limit Theorem (CLT) plays a significant role in the convergence of sample means to a normal distribution.

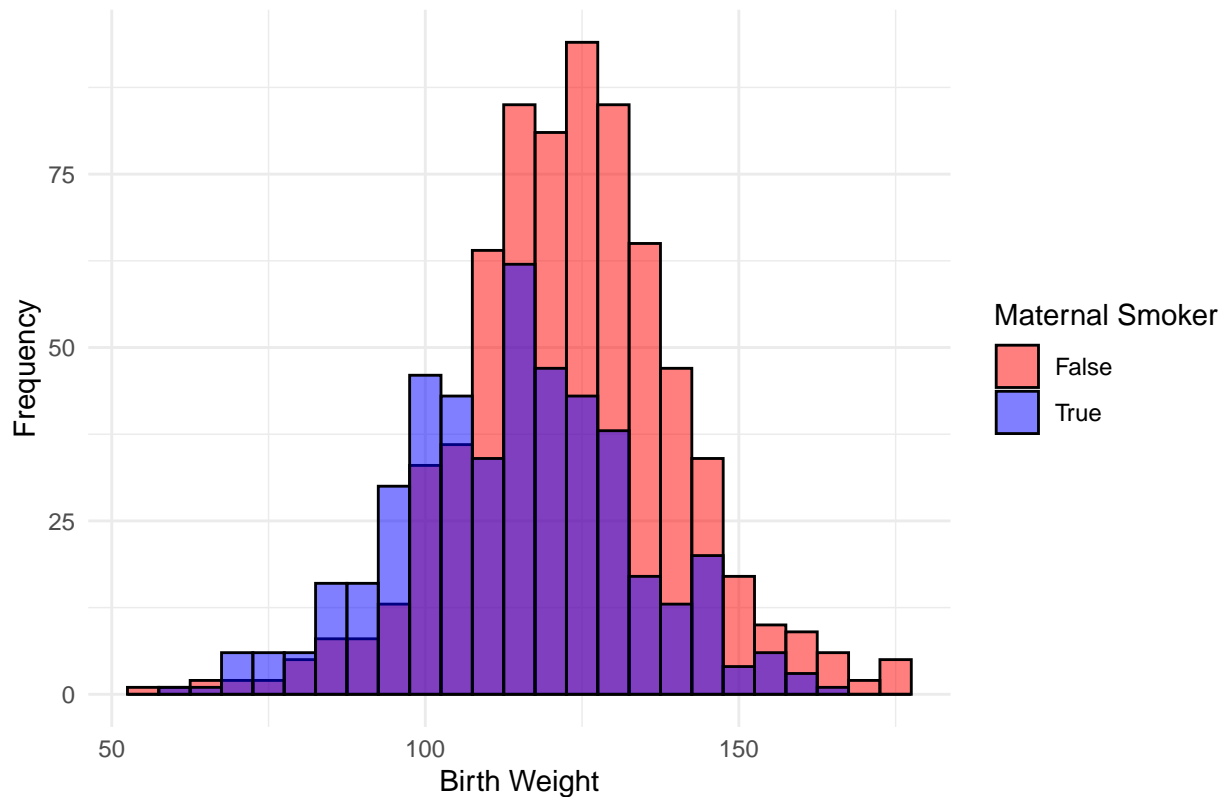
All the sub-parts of the questions are done here. What we did here is that, since the population size is 10,000 (which is a large number) it is very difficult and time consuming to study the height of 10,000 individuals. So we will study only 100 by randomly sampling from the population. If we pick one random sample of size 100 from 10,000 then the sample might not depict the properties of the population very well, i.e the mean and standard deviation might differ a lot. To ensure that, we will do this experiment of picking samples huge number of times, so that we will have 2000 small samples of size = 100. This is the prime idea of Central Limit Theorem. The more number of samples we pick, collectively it will depict the population much better. Then as we can see the sample means of each distribution is almost same as the population means of each distribution respectively, validating this result.

Q3 (i)

```
# Code for Question 3 part 1
library(ggplot2)
df=read.csv('baby.csv')
gg <- ggplot(df, aes(x = Birth.Weight, fill = Maternal.Smoker))

gg +
  geom_histogram(binwidth = 5, position = "identity", alpha = 0.5,col="black") +
  labs(
    title = "Overlaying Histograms of Birth Weight by Maternal Smoker Status",
    x = "Birth Weight",
    y = "Frequency",
    fill = "Maternal Smoker"
  ) +
  scale_fill_manual(values = c("False" = "red", "True" = "blue")) +
  theme_minimal()
```


Overlaying Histograms of Birth Weight by Maternal Smoker Status



```
result <- tapply(df$Birth.Weight, df$Maternal.Smoker, mean)
cat('Mean for Maternal Smoker(NO) :',result[1],'\n')
```

```
## Mean for Maternal Smoker(NO) : 123.0853
```

```
cat('Mean for Maternal Smoker(YES) :',result[2],'\n')
```

```
## Mean for Maternal Smoker(YES) : 113.8192
```

```
cat("It can be observed that the average weight of the child whose mother do not smoke is higher as compa")
```

```
## It can be observed that the average weight of the child whose mother do not smoke is higher as compa
```

Q3 (ii)

```
# Code for Question 3 part 2
result1 <- tapply(df$Birth.Weight, df$Maternal.Smoker, mean)
cat('Mean for Maternal Smoker(NO) :',result[1],'\n')
```

```
## Mean for Maternal Smoker(NO) : 123.0853
```

```
cat('Mean for Maternal Smoker(YES) :',result[2],'\n')
```

```
## Mean for Maternal Smoker(YES) : 113.8192
```

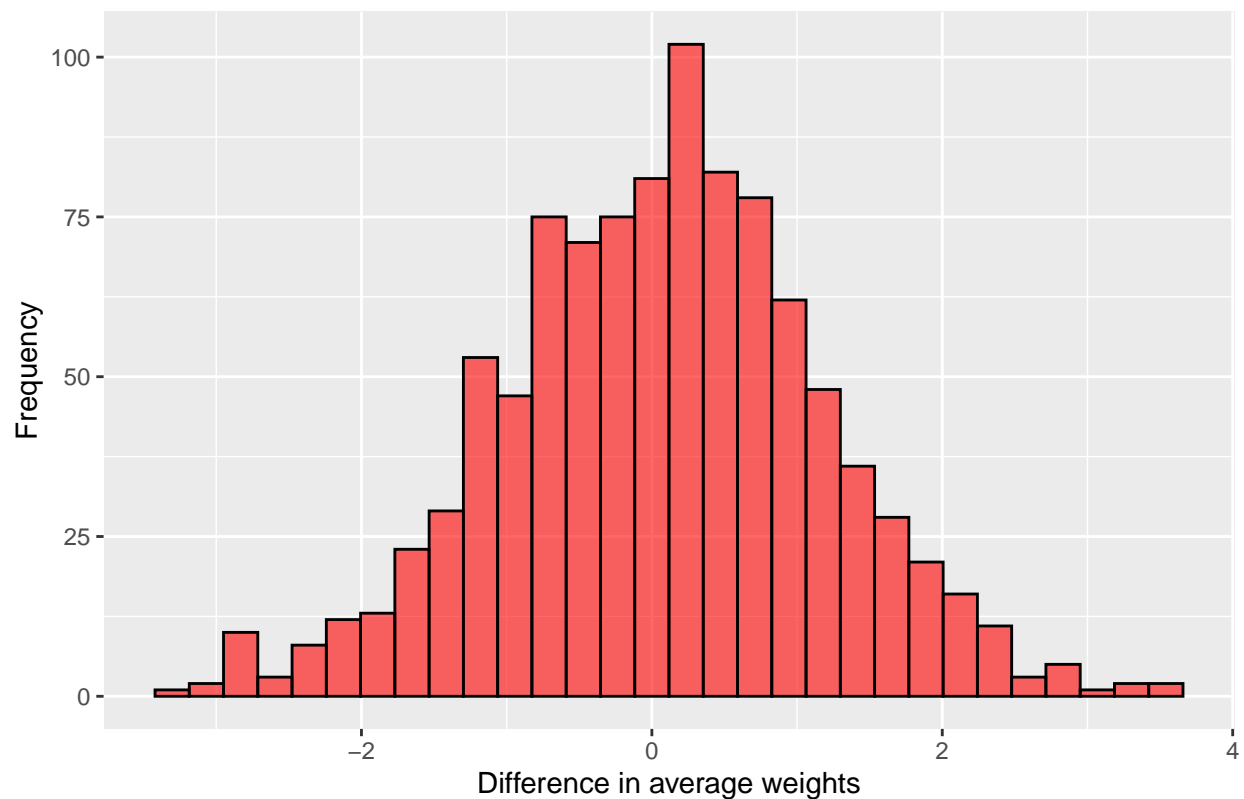
```
cat('The difference between the average weight of the smoking group and the average weight  
of the non-smoking group :',result1[1]-result1[2])
```

```
## The difference between the average weight of the smoking group and the average weight  
## of the non-smoking group : 9.266143
```

Q3 (iii)

```
# Code for Question 3 part 3  
df1=read.csv('baby.csv')  
sim=1000  
v=numeric(sim)  
for (i in 1:1000){  
  df1$Maternal.Smoker<-sample(df$Maternal.Smoker)  
  result <-tapply(df1$Birth.Weight,df1$Maternal.Smoker, mean)  
  v[i]=(result[1]-result[2])  
}  
df3=data.frame(v)  
ggplot(df3,aes(x=v))+  
  geom_histogram(bins = 30, fill = "red", color = "black",alpha = 0.6)+  
  labs(  
    title = "Differences in Average weights after shuffling the Maternal.Smoker Column",  
    x = "Difference in average weights",  
    y = "Frequency"  
  )
```

Differences in Average weights after shuffling the Maternal.Smoker Column



```
cat('Mean of the differences:',mean(v),'\n')
```

```
## Mean of the differences: 0.06395865
```

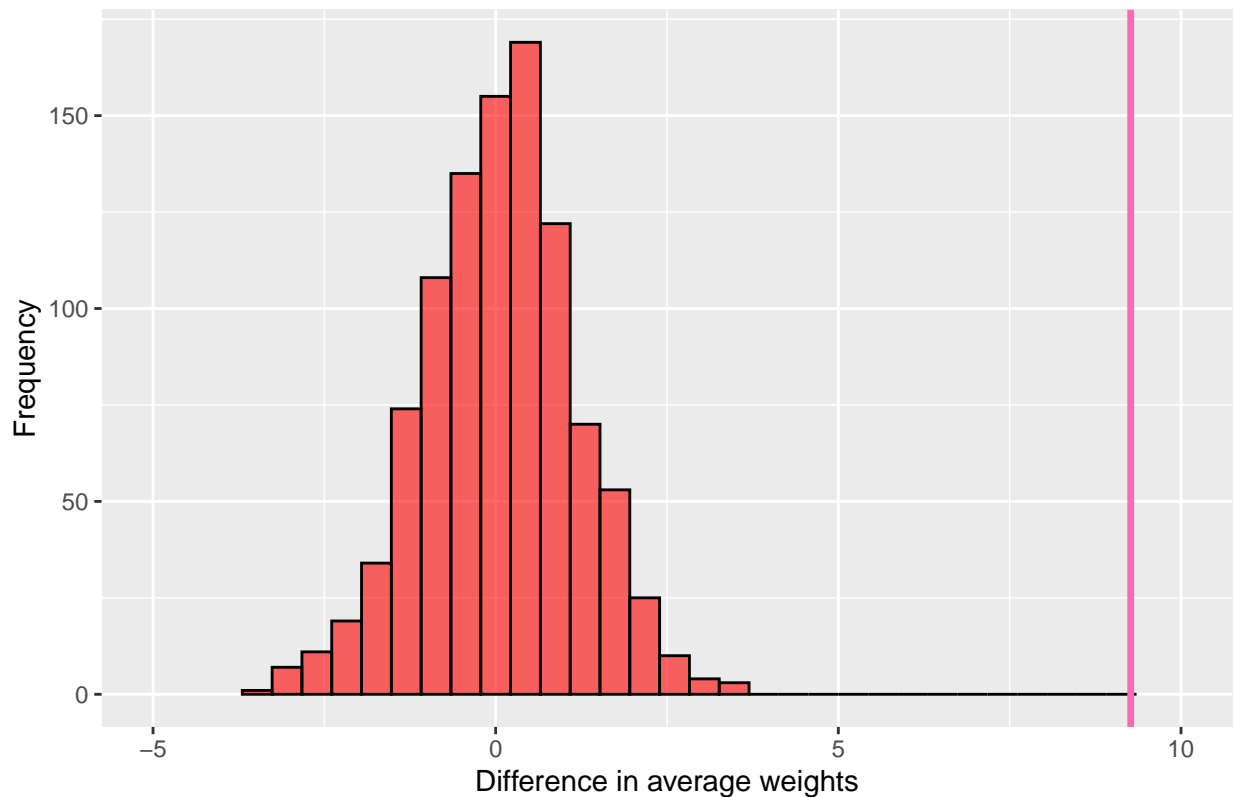
```
cat('Variance of the differences:',var(v),'\n')
```

```
## Variance of the differences: 1.211772
```

```
# Code for Question 3 part 4
ggplot(df3,aes(x=v))+
  geom_histogram(bins = 30, fill = "red", color = "black",alpha = 0.6)+
  geom_vline(xintercept=result1[1]-result1[2],col="hotpink", size = 1.2)+
  coord_cartesian(xlim=c(-5,10))+
  labs(
    title = "Actual observed difference and difference after shuffling",
    x = "Difference in average weights",
    y = "Frequency"
  )
```

```
## Warning: Using 'size' aesthetic for lines was deprecated in ggplot2 3.4.0.
## i Please use 'linewidth' instead.
## This warning is displayed once every 8 hours.
## Call 'lifecycle::last_lifecycle_warnings()' to see where this warning was
## generated.
```

Actual observed difference and difference after shuffling



```
# Code for Question 3 part 5
obs_diff=result1[1]-result1[2]
me=mean(v)
va=var(v)
sd=sqrt(va)
cat('The actual observed difference(Before Shuffling):',obs_diff=result1[1]-result1[2],'\n')
```

```
## The actual observed difference(Before Shuffling): 9.266143
```

```
cat('Mean of the differences(After Shuffling):',mean(v),'\n')
```

```
## Mean of the differences(After Shuffling): 0.06395865
```

```
cat('Standard Deviation of the differences:',sd,'\n')
```

```
## Standard Deviation of the differences: 1.100805
```

```
cat('No of Standard Deviations the observed difference is from the mean of the
simulated variables :',ceiling((obs_diff-me)/sd))
```

```
## No of Standard Deviations the observed difference is from the mean of the
## simulated variables : 9
```

So, here we have a dataset containing the information of the weight of a newborn baby, weight of the mother and whether the mother smokes or not. We will try to make a conclusion, that whether smoking effects the weight of a newborn baby or not, We will do this by using a technique called “Random Permutations” and finding the count of standard deviation to conclude our result. In the first histogram we can see that the average weight of the baby is more in case of non-smoking mothers than the average weight of the smoking mothers. Then we will see the difference of this weight, and name it “observed difference”. Then we will shuffle the Maternal.Smoker columns and find the difference of the weights of smoking and non-smoking case. And we will do this a huge number of times (10000 in this case). Then we will plot a histogram of these differences and we can clearly see the mean lies near “0”. But our “observed difference” was approximately 9. Hence there is a huge gap between those numbers. And if we find the count of standard deviations the observed difference is from the mean of the simulated variables we will get 9. Since 9 is big enough we will conclude Smoking does effect the weight of a baby a lot.