Keeve Lab 9

## Exercise 1



## Exercise 2

Running cA on pollen data

library(palaeoSig)

## Loading required package: vegan

## Loading required package: permute

## Loading required package: lattice

## This is vegan 2.5-2

data("arctic.env")  
data("arctic.pollen")  
arctic\_pollen\_sqrt <- sqrt(arctic.pollen)  
  
arctic\_pollen\_cca\_tave <- cca(arctic\_pollen\_sqrt ~ arctic.env$tave)  
arctic\_pollen\_cca\_tmax <- cca(arctic\_pollen\_sqrt ~ arctic.env$tmax)  
arctic\_pollen\_cca\_tmin <- cca(arctic\_pollen\_sqrt ~ arctic.env$tmin)  
#summary(arctic\_pollen\_cca\_tjan)  
#summary(arctic\_pollen\_cca\_tjul)  
summary(arctic\_pollen\_cca\_tmax)

##   
## Call:  
## cca(formula = arctic\_pollen\_sqrt ~ arctic.env$tmax)   
##   
## Partitioning of scaled Chi-square:  
## Inertia Proportion  
## Total 1.1409 1.0000  
## Constrained 0.1761 0.1544  
## Unconstrained 0.9648 0.8456  
##   
## Eigenvalues, and their contribution to the scaled Chi-square   
##   
## Importance of components:  
## CCA1 CA1 CA2 CA3 CA4 CA5  
## Eigenvalue 0.1761 0.1438 0.08789 0.07051 0.05173 0.04362  
## Proportion Explained 0.1544 0.1260 0.07703 0.06180 0.04534 0.03823  
## Cumulative Proportion 0.1544 0.2804 0.35741 0.41921 0.46455 0.50279  
## CA6 CA7 CA8 CA9 CA10 CA11  
## Eigenvalue 0.03428 0.03372 0.03234 0.02878 0.02632 0.02572  
## Proportion Explained 0.03005 0.02956 0.02834 0.02523 0.02307 0.02255  
## Cumulative Proportion 0.53284 0.56239 0.59074 0.61597 0.63904 0.66158  
## CA12 CA13 CA14 CA15 CA16 CA17  
## Eigenvalue 0.02450 0.02333 0.02155 0.02099 0.02059 0.01910  
## Proportion Explained 0.02147 0.02045 0.01889 0.01840 0.01805 0.01674  
## Cumulative Proportion 0.68305 0.70350 0.72239 0.74079 0.75884 0.77557  
## CA18 CA19 CA20 CA21 CA22 CA23  
## Eigenvalue 0.01862 0.01777 0.01720 0.01632 0.01539 0.01462  
## Proportion Explained 0.01632 0.01558 0.01508 0.01430 0.01349 0.01281  
## Cumulative Proportion 0.79189 0.80747 0.82254 0.83685 0.85034 0.86315  
## CA24 CA25 CA26 CA27 CA28 CA29  
## Eigenvalue 0.01339 0.01323 0.01285 0.01238 0.01154 0.011309  
## Proportion Explained 0.01173 0.01160 0.01126 0.01085 0.01012 0.009912  
## Cumulative Proportion 0.87488 0.88648 0.89774 0.90859 0.91871 0.928621  
## CA30 CA31 CA32 CA33 CA34  
## Eigenvalue 0.010956 0.010457 0.009957 0.009545 0.009274  
## Proportion Explained 0.009603 0.009165 0.008727 0.008366 0.008128  
## Cumulative Proportion 0.938224 0.947389 0.956116 0.964482 0.972610  
## CA35 CA36 CA37 CA38  
## Eigenvalue 0.008495 0.008258 0.007549 0.006948  
## Proportion Explained 0.007446 0.007238 0.006617 0.006090  
## Cumulative Proportion 0.980055 0.987293 0.993910 1.000000  
##   
## Accumulated constrained eigenvalues  
## Importance of components:  
## CCA1  
## Eigenvalue 0.1761  
## Proportion Explained 1.0000  
## Cumulative Proportion 1.0000  
##   
## Scaling 2 for species and site scores  
## \* Species are scaled proportional to eigenvalues  
## \* Sites are unscaled: weighted dispersion equal on all dimensions  
##   
##   
## Species scores  
##   
## CCA1 CA1 CA2 CA3 CA4 CA5  
## F.PABI 0.80012 1.59382 -1.218807 0.73661 -1.540217 0.97687  
## F.BALN 0.27064 -0.17231 -0.041841 0.17313 0.182365 -0.05526  
## F.CAMB 0.04446 0.70768 -0.477365 -0.51888 0.134709 -0.03343  
## F.APIA 0.03807 -1.07257 0.433298 -0.55465 -1.476786 -0.28183  
## F.CART -0.07651 0.05744 0.116074 -0.20955 0.216492 0.10558  
## F.TULI 0.03308 -0.15004 0.119580 -0.24880 -0.029703 0.26996  
## F.BBET 0.18399 -0.20777 -0.135906 0.07650 0.028764 -0.09616  
## F.BRAS -0.82732 0.43935 1.049439 0.49088 -0.045605 0.29074  
## F.CARY -0.88435 0.15420 0.423811 -0.02528 -0.168291 0.10627  
## F.CHEN 0.25222 0.71092 0.140937 -0.84201 0.191253 -0.17175  
## F.BCOR 0.43591 0.89778 0.373756 -1.56636 -0.366704 -0.01102  
## F.CUPR 0.25453 -0.21434 -0.254812 -0.25538 -0.180621 -1.17942  
## F.CYPE -0.26341 -0.23829 -0.009567 -0.10660 0.003017 0.16328  
## F.RDRY -1.11765 0.61921 1.070544 0.26878 0.091581 0.15880  
## F.ELAE 0.44305 -0.61073 0.138266 0.40928 0.547136 -0.82396  
## F.ERIC -0.36741 -0.32687 -0.340464 -0.34841 -0.007492 0.11869  
## F.FABA -0.65498 0.04006 0.157802 -0.26603 0.275995 0.46954  
## F.FFAG 0.74422 1.47359 -1.372440 0.51437 -2.092792 0.21978  
## F.OFRA 0.48321 1.19633 -0.427178 -0.94573 -0.678578 0.16277  
## F.PLAR 0.78585 0.94825 -0.560234 -0.04287 -0.106487 -0.04754  
## F.MMYR 0.69115 0.33835 -0.002585 0.04615 0.358004 -0.65216  
## F.ONAG -0.26997 -0.00887 -0.102850 -0.12982 0.178888 0.33348  
## F.POXR -1.06799 0.43367 0.779660 0.19724 -0.240513 -0.18577  
## F.PAPA -1.48436 1.00797 1.429766 0.41288 -0.140904 -0.30107  
## F.PPIC 0.50748 0.33397 -0.211104 0.32332 0.017887 -0.04646  
## F.PPIN 0.26303 0.86443 0.070446 -0.48416 0.253064 -0.07090  
## F.PPLA -0.52762 0.47202 1.031722 0.46589 -0.102631 -0.41796  
## F.POAC -0.29870 -0.33226 0.140533 -0.10388 -0.222000 0.12233  
## F.POLE 0.35187 -1.33744 0.345515 0.13549 -0.744636 1.27785  
## F.POLY -0.67237 -0.20593 0.196711 -0.41283 -0.241791 0.46067  
## F.SPOP 0.62232 -0.35846 0.241019 0.29961 0.145325 -0.13101  
## F.FQUE 1.04285 1.31612 -0.101519 -1.05928 -0.568821 -0.04657  
## F.RANU -0.61540 -0.23604 0.482021 -0.05295 -0.574657 -0.22340  
## F.ROSA -0.28195 -0.19271 0.457501 0.02101 -0.001285 0.29797  
## F.SSAL -0.42659 -0.14343 0.164675 -0.08762 -0.097031 -0.12794  
## F.SAXI -1.04186 0.48998 0.972149 0.26043 0.035588 0.17678  
## F.SCRO -0.86186 -0.05085 0.779294 0.01977 -0.236518 0.13423  
## F.RTHA -0.49092 -0.48086 0.021791 -0.56646 -2.038169 -2.01591  
## F.ULMA 1.07549 1.11132 0.115616 -1.49389 -0.603724 -0.13781  
##   
##   
## Site scores (weighted averages of species scores)  
##   
## CCA1 CA1 CA2 CA3 CA4 CA5  
## 1 7.878e-02 0.9099819 -0.616046 -0.882450 1.435875 -0.332435  
## 2 -4.909e-01 0.9130474 -0.758911 -1.039490 -0.096233 1.419122  
## 3 -3.651e-01 1.4264777 -1.052872 -0.962421 1.057928 0.520823  
## 4 2.101e-01 1.2996609 -1.878107 -0.785640 0.103505 0.910494  
## 5 -2.062e-01 0.7593566 -0.857089 -1.250832 0.918469 0.132441  
## 6 -2.862e-01 1.2316985 -0.714653 -1.753216 0.851416 0.313318  
## 7 -3.295e-01 0.4923193 -0.975104 -1.107904 0.471448 1.012073  
## 8 -7.815e-01 0.8727953 -0.157384 -0.652540 1.117558 0.134701  
## 9 -3.507e-01 0.6087188 -1.617879 -0.969989 1.405623 0.116609  
## 10 -8.038e-01 0.2474744 -0.558661 -0.771883 0.699309 -0.042720  
## 11 -1.042e+00 0.9587991 -0.929153 -0.804349 1.090355 -0.061462  
## 12 -7.243e-01 0.7170807 -0.261934 -1.500584 0.916186 0.868497  
## 13 -8.579e-01 1.2207548 0.410704 -1.785642 0.629373 0.025496  
## 14 -1.007e+00 -0.0351227 -1.166860 -0.929015 0.762064 -0.016883  
## 15 -4.222e-01 0.6405332 -1.989766 -1.097882 1.278102 -0.093654  
## 16 -8.585e-01 0.7352898 -0.369891 -1.382137 0.570057 0.678100  
## 17 -1.482e+00 0.8767227 0.882872 -0.572413 0.786921 0.401177  
## 18 -5.391e-01 1.1569010 -0.806939 -0.370521 0.040368 0.804188  
## 19 -3.303e-01 0.6632454 -1.416720 -0.816389 1.067590 -0.137003  
## 20 -1.349e+00 0.6885357 -0.199643 -0.716142 0.262552 0.268838  
## 21 -7.136e-01 0.3468576 -0.970409 -0.862203 1.000389 0.092969  
## 22 -9.310e-01 0.6967022 -0.423909 -0.672327 1.009539 -0.052325  
## 23 -1.482e+00 0.0654713 -0.169088 -0.123771 0.162994 0.396063  
## 24 -1.103e+00 -0.1491154 -1.675415 -1.118111 0.798337 0.416974  
## 25 -1.380e+00 -0.3172812 -1.014667 -0.997066 -0.068492 0.425171  
## 26 -7.726e-01 0.4172541 -1.411624 -1.343355 1.322753 0.781690  
## 27 -1.519e+00 -0.2590362 -0.890757 -0.777824 0.093385 0.187594  
## 28 -1.055e+00 0.2981478 -1.008817 -1.086473 0.369801 -0.134715  
## 29 -9.971e-01 0.6083767 -0.252672 -0.966891 0.672856 0.268565  
## 30 -9.376e-01 0.1542935 -0.992620 -1.218007 0.892401 1.075201  
## 31 -8.588e-01 -0.3516617 -1.315956 -0.691826 0.158805 0.184041  
## 32 -1.290e+00 0.2467249 -0.957818 -1.055455 0.447581 0.140430  
## 33 -1.367e+00 0.0314361 -0.919239 -0.973139 0.624768 0.657726  
## 34 -8.854e-01 0.6366894 -0.753091 -1.090919 1.287896 0.563440  
## 35 -1.078e+00 0.4730085 -1.111377 -0.819079 0.997690 0.354534  
## 36 -1.567e+00 -0.0232559 -0.524844 -0.726265 0.266807 0.609809  
## 37 -1.459e+00 0.7192811 0.402653 -1.538095 -0.335385 1.074643  
## 38 -7.962e-01 -0.4582612 -0.959869 -0.372705 0.548826 -0.181827  
## 39 -9.955e-01 -0.2304912 -1.163153 -0.485084 0.608568 -0.300270  
## 40 -1.259e+00 -0.5498545 -1.298221 -0.278913 0.364399 0.205687  
## 41 -5.014e-01 0.3247849 -2.461157 -1.514925 1.674738 0.218129  
## 42 -1.925e+00 0.0365928 -0.496538 -0.476246 0.276436 0.263399  
## 43 -1.715e+00 0.0347018 -0.575084 -0.526678 -0.248901 0.165292  
## 44 -1.550e+00 0.3557303 -1.084636 -0.511288 0.380001 -0.485792  
## 45 -1.770e+00 0.3815089 -0.031449 -0.763772 0.074357 0.691991  
## 46 -2.336e+00 -0.0553561 0.647534 0.234042 -0.278385 0.702471  
## 47 -2.288e+00 -0.1065596 0.647193 0.035869 -0.337831 0.737971  
## 48 -2.219e+00 0.1831957 0.480924 -0.449847 -0.085472 0.284223  
## 49 -7.287e-01 1.1416079 -2.014776 -0.719238 0.413425 0.594226  
## 50 -1.624e+00 0.6291477 -0.186020 -0.883114 0.593317 -0.089412  
## 51 -2.095e+00 0.7264396 0.458122 0.203386 1.006556 0.683723  
## 52 -2.354e+00 0.2558878 1.356479 -0.179268 -0.411659 0.978940  
## 53 -2.397e+00 0.6996218 1.060952 -0.553447 -0.177799 0.638459  
## 54 -1.811e+00 -0.1856015 -0.179347 -0.091296 0.225484 0.731969  
## 55 -2.163e+00 0.6640655 0.548185 -0.586938 0.123737 0.185945  
## 56 -2.063e+00 0.3956529 0.417914 -0.546612 0.290833 0.874588  
## 57 -2.103e+00 -0.5700311 -0.994480 -1.387187 -0.062450 1.136425  
## 58 -2.217e+00 0.4089094 0.361705 -1.040039 0.740244 1.935980  
## 59 -2.039e+00 0.8400561 0.763076 -0.313406 0.557334 0.477982  
## 60 -1.385e+00 1.3269185 0.108214 -1.321817 1.242156 0.809420  
## 61 -1.735e+00 0.6454807 0.226585 -0.076058 0.699368 0.055205  
## 62 -1.689e+00 0.8238058 0.314219 -0.132871 1.040323 0.986767  
## 63 -1.637e+00 0.8491421 0.475809 -0.508830 0.862070 0.887352  
## 64 -2.682e+00 0.5269738 1.597622 0.267473 -0.581086 -0.245322  
## 65 -2.430e+00 0.4905625 1.303768 0.340114 -0.075816 0.594064  
## 66 -1.359e+00 0.8380323 0.099985 -0.477258 1.014565 0.205069  
## 67 -2.203e+00 0.4227785 1.152063 0.141331 0.050372 0.659417  
## 68 -1.857e+00 0.3231692 -0.075008 -0.848176 0.114173 0.790168  
## 69 -2.238e+00 1.2916597 1.333653 -0.263286 0.672557 0.314016  
## 70 -9.808e-01 0.8915045 0.352355 -0.031894 0.688371 0.289608  
## 71 -1.311e+00 1.2171702 1.184962 0.007028 0.699474 -0.182997  
## 72 -1.468e+00 0.9968925 0.828742 -0.374000 0.830595 0.847266  
## 73 -1.106e+00 1.6941940 0.976988 -0.233324 1.142110 -0.105206  
## 74 -1.492e+00 0.9832196 0.782338 -0.390443 -0.146394 -0.561496  
## 75 -9.959e-01 1.2552995 0.473766 0.746867 0.983710 0.353217  
## 76 -1.538e+00 1.2359937 1.004204 0.582860 -0.237488 -1.362857  
## 77 -5.350e-01 1.4197040 -0.191014 -0.079480 0.845091 -0.104827  
## 78 -1.081e+00 0.9461051 0.504462 0.757538 0.626323 0.154930  
## 79 -8.092e-01 1.2441824 1.033406 0.078621 0.953093 -0.495465  
## 80 -1.107e+00 1.5994000 1.761429 0.250879 1.191903 0.160111  
## 81 -1.468e+00 0.7362725 0.786329 0.587064 -0.727403 -0.987301  
## 82 -1.548e+00 1.2447288 0.885321 0.668587 0.651858 -0.312896  
## 83 -1.339e+00 1.0637729 0.754282 0.524369 0.311800 0.638630  
## 84 -1.022e+00 1.3098403 0.506789 0.225709 0.434964 -0.444453  
## 85 -2.291e+00 1.4427363 2.107450 0.833428 -0.077691 -0.102041  
## 86 -1.109e+00 1.5313563 0.764200 0.930496 0.196492 -0.761338  
## 87 -1.070e+00 1.2695405 0.088828 0.425321 0.576274 -0.325637  
## 88 -8.850e-01 0.4656602 -0.275306 0.871003 0.581182 -0.511314  
## 89 -4.942e-01 1.0518390 -0.450136 0.110444 0.330318 -1.088542  
## 90 -6.196e-01 1.2066347 -0.425873 0.433745 1.683117 -0.122936  
## 91 -2.196e+00 1.3840122 2.170849 0.331128 -0.383140 -0.022486  
## 92 -2.435e+00 1.4920739 2.563775 1.332305 -0.107223 0.434481  
## 93 -6.888e-01 1.3129687 -0.312738 0.908050 0.531525 -0.522324  
## 94 -1.001e+00 1.2098022 -0.434067 0.746454 0.852107 -0.191854  
## 95 -1.044e+00 1.4932848 0.326914 0.390965 1.040058 -0.981119  
## 96 -1.197e+00 0.8049671 0.306778 1.007420 0.333171 -0.172116  
## 97 -2.330e+00 1.0110564 1.944944 1.066535 -0.924152 -0.552547  
## 98 -1.461e+00 1.8263692 0.681261 0.230180 0.541258 -0.914809  
## 99 -1.501e+00 1.5400078 0.733692 0.338262 0.273432 -1.083001  
## 100 -1.606e+00 0.8138182 0.653577 0.760170 -1.226464 -0.664498  
## 101 -2.102e+00 2.0905235 2.697992 1.158612 -0.081471 -1.059661  
## 102 -1.570e+00 2.1640404 1.800975 1.396696 0.550763 -1.213308  
## 103 -1.430e+00 1.3891232 0.942623 0.952012 0.114608 -1.068492  
## 104 -2.282e+00 0.5109852 0.494994 0.292558 -0.583088 -0.699868  
## 105 -2.302e+00 0.7315552 1.425618 0.196815 -0.902103 -0.434791  
## 106 -3.757e+00 1.5124756 4.289653 1.756963 -1.506365 -0.861802  
## 107 -3.076e+00 0.9465759 2.771760 0.873608 -1.242838 -0.501563  
## 108 -3.077e+00 0.7212550 2.622773 1.087817 -0.813361 0.057404  
## 109 -2.472e+00 0.4718387 1.557872 0.739008 -0.684365 -0.231040  
## 110 -2.995e+00 0.8764296 2.525142 1.177478 -0.974182 -0.055998  
## 111 -2.111e+00 1.4252356 1.718009 0.494590 -0.610277 -1.887332  
## 112 -2.707e+00 0.0704666 1.620607 0.514693 -2.315101 -0.942636  
## 113 -3.139e+00 0.7113545 2.117428 0.556400 -2.878220 -2.997161  
## 114 -2.402e+00 0.4660374 0.974853 0.344716 -0.844622 -0.578986  
## 115 -3.526e-01 -0.5959270 -0.963632 -0.724059 0.291359 1.066820  
## 116 3.144e-01 0.1858180 -0.957237 -0.756560 0.750424 -0.174038  
## 117 6.217e-01 0.2374904 -1.152391 0.170566 1.416278 -0.316458  
## 118 -1.040e+00 -0.1266522 0.694853 -1.042323 -0.392519 0.887321  
## 119 -6.363e-01 -0.5172699 -2.072131 -1.852993 0.496956 0.560623  
## 120 -8.585e-01 -0.6699714 -1.904240 -1.921278 0.243942 0.625391  
## 121 -8.768e-01 -0.6741458 -1.187451 -1.526226 -1.114182 -1.271302  
## 122 -7.748e-01 -1.1948920 -1.657141 -1.126618 -0.407003 0.325315  
## 123 -7.012e-01 -0.8977377 -1.602716 -0.817072 0.008270 0.075557  
## 124 -6.762e-01 -0.6549822 -1.663766 -0.823865 0.571163 -0.216782  
## 125 -7.800e-01 -0.6761329 -1.884019 -1.365396 -0.768573 -0.893958  
## 126 -7.816e-01 -0.9655176 -1.721520 -0.564896 0.354825 -0.129422  
## 127 -7.592e-01 -0.5997134 -1.863599 -1.427051 -0.709206 -0.901591  
## 128 -1.337e+00 -0.8517451 -0.675830 -1.392248 -0.577026 -0.040083  
## 129 -8.189e-01 -1.0018498 -1.734001 -0.951640 -0.474480 -0.828049  
## 131 -9.799e-01 -1.0895040 -1.761086 -1.026875 0.019363 -0.234968  
## 132 -8.205e-01 -0.7917703 -1.573443 -1.029634 -1.029288 -1.407982  
## 133 -6.863e-01 -0.9322241 -1.670878 -0.736946 0.125315 0.414992  
## 134 -1.360e+00 -1.1390176 -1.271298 -2.084963 -0.457879 1.080527  
## 135 -1.497e+00 -0.9744092 -0.373820 -1.295967 -0.982613 0.878459  
## 136 -6.355e-01 -0.9497459 -1.791966 -0.985354 0.148618 -0.450430  
## 137 -6.877e-01 -0.9295236 -1.391677 -0.678125 -0.080692 -0.377128  
## 138 -1.033e+00 -1.3277233 -1.432461 -1.078720 -1.229702 -0.872645  
## 139 -9.038e-01 -1.1348569 -0.666864 -0.766150 -1.475806 -1.726641  
## 140 -8.566e-01 -1.4069989 -0.444958 -1.074081 -2.683806 -1.963417  
## 141 -7.854e-01 -0.9274317 -0.884608 -1.113353 -1.624428 -2.079718  
## 142 -1.417e+00 -1.4577473 -0.460087 -1.354596 -3.213773 -1.848484  
## 143 -8.686e-01 -1.0248378 -0.630721 -1.231961 -1.582900 -1.062845  
## 144 -6.566e-01 -1.0417746 -1.171778 -1.227158 -1.263521 -1.850637  
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## 148 -8.439e-01 -0.2963650 -0.440076 -0.819129 0.166487 -0.194742  
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## 150 -9.278e-01 -0.2405410 -0.267185 -0.848610 -0.519178 -0.443984  
## 151 -1.527e+00 -0.8186599 0.510187 -0.744170 -4.234358 -4.520025  
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## 153 -1.682e+00 -1.0335458 0.520444 -1.174472 -6.680635 -6.832557  
## 154 -1.555e+00 -1.0680747 -0.039101 -1.255423 -5.371678 -4.690429  
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## 156 -1.104e+00 -0.4782519 0.071119 -0.933882 -0.506857 0.446333  
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## 160 -5.038e-01 -0.6579426 -1.803917 -0.013655 0.463148 -2.170211  
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## 163 -9.304e-01 -0.6679226 -1.145211 -1.469957 -0.942768 -1.235088  
## 164 -3.922e-01 -0.8358625 -1.970232 -0.081484 -1.040338 -4.531621  
## 165 -6.140e-01 -1.0922082 -1.720910 -0.174809 -0.439680 -2.247320  
## 166 -6.824e-01 -0.7473437 -1.246268 -0.995516 -0.954492 -1.552634  
## 167 -7.733e-01 -0.7709920 -1.113145 -0.652357 -1.670256 -3.387948  
## 168 -9.406e-01 -0.8153393 -0.990799 -0.898229 -0.148420 0.592681  
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## 173 -2.242e+00 -0.4061047 -0.429859 -1.250736 -2.918493 -2.255736  
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## 175 -1.780e+00 -0.5215029 -1.961830 -1.074463 0.332480 0.127546  
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## 177 -3.098e+00 0.4882829 2.466870 1.190325 -0.979225 0.867063  
## 178 1.962e-01 -1.1220467 0.811331 0.192022 0.234860 0.402592  
## 179 -1.027e+00 -1.1030787 0.370085 -0.151526 -1.356424 0.691289  
## 180 -8.562e-01 -0.9220597 1.405299 0.324462 -0.409514 1.049696  
## 181 -4.334e-01 -0.8332814 -0.303220 -0.137907 0.472042 1.032690  
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## 194 -6.825e-01 -1.2580027 -0.066562 -0.452701 -0.223944 1.271893  
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## 360 1.362e+00 1.2157349 -1.270766 0.788046 -1.393555 0.039430  
## 361 1.501e+00 1.2303208 -1.264637 0.740868 -0.389670 0.093452  
## 362 1.682e+00 1.2935032 -1.236593 0.949854 -0.330708 -0.555462  
## 363 1.845e+00 1.7567168 -1.059896 0.699979 1.529501 -0.942080  
## 364 1.643e+00 1.1517499 -0.600388 -0.983646 -0.007822 -1.051966  
## 365 1.409e+00 0.9495343 -0.652183 -0.157429 0.744889 -1.067465  
## 366 1.424e+00 0.8765867 -0.639433 -0.474238 0.378553 -1.382346  
## 367 1.245e+00 0.9897263 -0.447827 -0.268153 0.304237 -0.602681  
## 368 1.599e+00 0.7610860 -0.475169 0.623271 -1.068442 -1.386235  
## 369 1.423e+00 1.1068952 -0.830041 -0.407344 -0.611092 -0.641159  
## 370 1.571e+00 0.7997935 -0.655998 0.176573 0.494604 -1.540087  
## 371 1.215e+00 0.5753691 -0.680623 -0.301306 0.568186 -0.625799  
## 372 1.472e+00 0.6455936 -0.454887 0.211073 0.642425 -1.026745  
## 373 1.594e+00 0.9696606 -0.194457 -0.648703 0.440165 -0.686900  
## 374 1.505e+00 0.8572154 -0.281156 -0.430247 0.907730 -1.553272  
## 375 1.466e+00 0.7922410 -0.354904 -0.299726 0.325325 -0.949689  
## 376 1.520e+00 0.8816332 -0.607419 -0.092837 -0.154501 -0.770730  
## 377 1.486e+00 1.1315817 -0.550732 -0.041431 0.347126 -0.946898  
## 378 1.464e+00 0.6168172 -0.329663 -0.087482 0.926732 -1.010187  
## 379 9.131e-01 0.2764450 0.349378 -0.885985 0.979670 0.171288  
## 380 1.030e+00 0.4452137 0.299270 -0.836709 0.979297 0.124454  
## 381 8.793e-01 -0.2951720 0.499365 -0.206781 1.206372 0.066001  
## 382 8.895e-01 -0.0260683 0.398100 -0.361436 0.889245 0.196246  
## 383 8.268e-01 -0.1630459 0.568672 -0.414909 0.961476 0.349364  
## 384 1.346e+00 0.2747675 0.164063 -0.759893 0.231466 -0.995888  
## 385 1.176e+00 0.0961040 -0.048530 -0.394751 0.322216 -0.511428  
## 386 1.300e+00 0.5347029 0.398936 -0.607627 0.634578 -1.557750  
## 387 1.213e+00 0.5274494 0.034147 -1.047422 0.321430 -0.434807  
## 388 1.296e+00 0.5504473 0.186994 -1.325370 0.339456 -1.174943  
## 389 1.335e+00 1.0800161 -0.451825 0.153594 0.691488 -0.725054  
## 390 1.310e+00 0.9137960 -0.410301 -0.781460 0.432755 -0.427938  
## 391 1.428e+00 0.3715159 -0.574773 0.131381 0.141570 -1.241576  
## 392 1.763e+00 1.1891333 -0.719676 -0.380131 0.090446 -0.841206  
## 393 9.207e-01 0.0338119 0.040898 0.462355 0.612413 -1.411191  
## 394 1.350e+00 0.5508375 -0.589534 -0.214606 -0.029509 -0.465301  
## 395 1.016e+00 0.6109307 2.045433 -3.507492 -0.993665 -0.571520  
## 396 1.250e+00 1.0213732 1.904056 -3.912396 -0.816915 0.361953  
## 397 1.049e+00 0.6815252 2.046869 -3.593485 -0.290847 0.340926  
## 398 1.252e+00 1.2595031 1.708674 -3.366238 0.178134 0.156475  
## 399 1.543e+00 1.7925514 1.639008 -3.100627 0.507719 0.194788  
## 400 1.890e+00 2.4913276 0.787156 -2.420223 -0.805907 0.896628  
## 401 1.766e+00 2.4268673 0.914027 -3.001152 -1.533331 0.842288  
## 402 1.581e+00 2.2050345 1.276615 -2.733866 -0.882346 1.139650  
## 403 1.632e+00 1.9061982 1.098570 -2.912984 -1.624178 -0.409043  
## 404 1.425e+00 2.6315138 1.402821 -3.858730 -0.181447 0.584346  
## 405 1.890e+00 2.9667188 0.699958 -2.959728 -0.310521 0.804727  
## 406 1.785e+00 2.6183391 1.196717 -3.302961 -0.532966 0.641146  
## 407 1.378e+00 2.1437941 1.343765 -3.249596 -0.665927 0.771038  
## 408 1.291e+00 1.9712439 1.729579 -3.485567 1.114961 -0.098969  
## 409 1.319e+00 1.7511430 1.103535 -2.266218 -1.536346 0.050448  
## 410 9.211e-01 0.3353087 2.152487 -3.299181 -1.623319 -0.729021  
## 411 1.123e+00 1.2996446 1.913667 -3.703554 -1.056332 -0.595592  
## 412 1.072e+00 0.7546533 1.562135 -2.001633 0.628685 -0.455100  
## 413 1.342e+00 1.8658599 0.900271 -2.336195 1.465466 -0.511248  
## 414 1.570e+00 2.6445028 0.424144 -2.431630 1.821800 -1.351973  
## 415 1.440e+00 2.0084406 0.486813 -1.363227 -0.244074 0.376027  
## 416 1.017e+00 1.0981817 1.005520 -1.216337 1.419048 -0.113795  
## 417 1.159e+00 1.8361596 0.417108 -2.479595 2.471969 -0.457221  
## 418 1.003e+00 0.4227701 1.702705 -0.978239 0.117350 -0.884202  
## 419 5.111e-01 0.4803382 0.919210 -0.730372 0.736629 -0.539709  
## 420 1.392e+00 0.6013303 0.445726 -0.539180 2.057030 -0.898463  
## 421 1.412e+00 1.2722859 0.019694 -0.596821 0.479941 -1.606314  
## 422 1.018e+00 1.0635107 0.533449 -0.514507 0.051560 0.688966  
## 423 1.486e+00 1.3185220 0.682850 -1.242004 1.129390 -0.959795  
## 424 9.294e-01 0.6547942 0.054713 -0.650457 1.781503 0.272598  
## 425 1.267e+00 1.3859748 0.960209 -1.072476 1.152008 0.258504  
## 426 4.346e-01 -1.1232637 0.227525 0.326260 0.414756 0.470401  
## 427 9.225e-01 -0.5913277 -0.038634 1.317764 0.488640 -0.440816  
## 428 7.022e-01 0.7532583 -0.783780 -1.160214 0.351642 0.262645  
## 429 1.071e+00 -0.7282504 -0.248229 1.370392 0.475276 -0.445051  
## 430 1.858e+00 2.2543345 -0.946206 0.864877 -0.701746 0.688725  
## 431 1.373e+00 0.8929641 0.658534 -0.631115 1.105454 -0.903611  
## 432 1.397e+00 0.9775714 0.926514 -0.135434 0.983275 -0.855302  
## 433 1.576e+00 0.5646501 0.402097 -0.091546 0.826413 -1.516907  
## 435 1.366e+00 0.9529904 0.776391 -1.044409 1.142632 -1.071525  
## 436 3.191e-01 -1.1655743 0.309974 0.729603 0.299474 0.271255  
## 437 1.118e+00 -0.6921090 0.018864 1.177467 0.509034 -0.689770  
## 438 1.051e+00 -0.6868561 -0.144853 1.490590 0.624580 -0.586841  
## 439 1.196e+00 -1.0066059 -0.292644 1.409704 0.795330 -0.680840  
## 440 1.171e+00 0.6022433 1.540729 -0.427245 0.858583 0.025313  
## 441 1.381e+00 -0.3518475 -0.170184 1.561406 0.496748 -0.649620  
## 442 1.059e+00 0.5909689 1.402624 -0.655900 0.828085 -0.578008  
## 443 6.756e-01 -0.4756785 0.095116 0.941613 0.281578 0.024080  
## 444 6.071e-01 -1.0083399 0.217059 0.920444 0.118157 -0.046452  
## 445 1.098e+00 -0.2390669 -0.217872 1.218136 0.625804 -0.398066  
## 446 1.466e+00 -0.2168806 0.076148 1.543989 0.682048 -0.619664  
## 447 1.772e+00 -0.4808316 -0.514697 2.196132 0.901619 -1.154954  
## 448 2.916e-02 -0.9880347 1.175275 0.050007 -1.017829 -1.072056  
## 449 8.798e-01 -0.8832379 -0.205864 0.783461 0.450622 -0.312952  
## 450 3.330e-01 -0.9228650 0.672824 0.080404 -0.943752 -0.467431  
## 451 4.841e-01 -0.4905134 0.867117 0.357482 -0.020361 -0.115944  
## 452 4.993e-01 -0.6406991 0.858497 0.551235 -0.326199 -2.035745  
## 453 5.503e-01 -0.7270121 0.516261 0.437158 0.280135 -0.365833  
## 454 5.145e-01 -0.8665352 0.081042 0.887253 0.472571 -0.128849  
## 455 1.495e+00 1.2399299 0.699260 -0.618368 0.980340 -0.567334  
## 456 8.557e-01 -0.8681152 0.320664 1.160259 0.233620 0.070553  
## 457 1.193e+00 -0.6478492 -0.233940 1.502021 0.326050 -0.468091  
## 458 4.486e-01 -1.0865500 0.433085 0.477913 0.133444 0.371382  
## 459 8.889e-01 -0.7161171 -0.386096 1.265471 0.817577 -0.261508  
## 460 1.360e+00 -0.5499305 0.150259 1.630593 0.781520 -0.270678  
## 461 8.178e-01 -0.7498085 -0.082522 1.025938 0.734139 0.198051  
## 462 5.951e-01 -0.8005697 -0.171880 1.009948 0.433217 0.025870  
## 463 1.026e+00 -0.7972854 -0.137496 1.351163 0.527166 -0.368923  
## 464 6.465e-01 -0.7599291 -0.107472 0.756382 0.299017 -0.380346  
## 465 1.757e+00 0.0348653 -0.703873 2.368753 0.601005 -0.593777  
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## 467 1.420e+00 1.3162416 0.698353 -0.729514 1.044708 -0.133551  
## 468 7.692e-01 -0.9912434 0.174085 0.873561 0.055582 -0.019383  
## 469 5.337e-01 -0.5417358 0.652296 0.691495 0.163327 0.591302  
## 470 2.476e-01 -0.8537833 0.730493 0.837087 -0.293229 -0.311901  
## 471 9.139e-01 -0.8550644 0.304614 0.913437 0.177414 -0.736949  
## 472 1.472e+00 0.7003754 1.048620 0.059492 1.128849 -1.044029  
## 473 7.793e-01 -0.9214459 0.092432 0.993327 0.104147 -0.117976  
## 474 1.441e+00 1.0360060 0.737824 0.047070 0.678101 -1.046341  
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## 476 9.229e-01 -0.7173338 0.074565 1.166650 0.620637 -0.579521  
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## 478 1.392e+00 -0.4200784 -0.069632 1.720379 -0.144763 0.577106  
## 479 2.251e-01 -1.2995035 0.811634 0.176564 -0.869055 0.075572  
## 480 5.932e-01 -0.6124566 0.682133 0.499408 -0.228348 -0.854326  
## 481 1.099e+00 1.0939871 -0.775902 -0.632415 2.509022 -2.115769  
## 482 1.008e+00 1.0650626 -0.505016 0.187670 2.008707 -1.840268  
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## 484 1.503e+00 -0.3964470 -0.028598 1.529695 0.155175 -0.530848  
## 485 1.218e+00 -0.4864220 0.069876 1.139635 0.367479 -0.475461  
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## 504 1.307e+00 -0.2653552 0.437346 0.986431 0.620828 -0.960572  
## 505 4.261e-01 -0.8875908 0.473107 0.347058 -0.123955 0.231071  
## 506 8.103e-01 -1.0505148 0.937281 0.711703 0.076681 -0.442425  
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## 515 1.563e+00 0.0935480 0.287698 1.176037 0.640496 -1.053533  
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## 517 1.379e+00 0.5910103 0.460920 1.172572 1.085237 -0.852988  
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## 522 1.103e+00 -0.7750446 0.349970 1.457609 0.248844 -0.415868  
## 523 1.026e+00 -0.7578689 0.607433 1.291316 -0.027250 -0.423784  
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## 525 1.268e+00 -0.8083914 0.364301 1.530638 0.329921 -0.598322  
## 526 8.179e-01 -0.9994063 0.843743 0.698398 0.139607 -0.159259  
## 527 8.063e-01 -0.9793614 0.949347 0.658761 0.194418 -1.103936  
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## 532 7.101e-01 -1.1804536 1.204957 0.879832 -0.102566 0.857438  
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## 535 4.909e-01 -1.3641117 -0.352238 0.476433 0.321055 0.129541  
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## 542 8.115e-01 -0.8424167 0.404859 0.947050 -0.183403 0.385571  
## 543 4.423e-01 -0.8358567 0.553598 0.954799 0.311566 0.273169  
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## 545 5.279e-01 -1.0332435 -0.162513 0.612384 0.682032 0.090182  
## 546 1.621e-01 -1.1764090 0.208632 0.245049 0.337292 0.801286  
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## 549 7.319e-01 -0.7001119 -0.129548 1.381857 0.507877 -1.544953  
## 550 6.969e-01 -0.7206422 0.225012 1.070354 -0.260744 -0.954721  
## 551 6.869e-01 -0.7838108 0.029947 0.742058 0.181335 -0.203200  
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## 586 1.642e+00 0.6195083 -1.080120 1.197914 1.077894 -0.471982  
## 587 1.118e+00 0.5416258 -0.724585 -0.067314 1.191750 -0.294160  
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## 792 6.343e-01 -1.0980743 -0.711834 0.797037 1.395769 -1.077469  
## 793 7.464e-02 -0.8580386 0.092906 0.381213 0.333778 -0.062126  
## 794 -1.812e-01 -0.1263120 0.351431 0.312092 0.571733 -0.689021  
## 795 -1.036e-01 -0.2609987 -0.120957 0.396899 0.006185 -0.205850  
## 796 -3.404e-01 0.2230800 0.506805 0.375980 0.851562 -0.097696  
## 797 1.544e-01 -0.0577849 -0.420413 0.429235 0.904694 -0.239455  
## 798 -2.017e-01 -0.0303290 0.254094 0.571711 0.785320 -0.469188  
## 799 -4.808e-01 0.0541959 0.616077 0.578224 0.665994 0.201809  
## 800 -4.767e-01 0.1381214 0.730329 0.924535 0.400695 -0.469991  
## 801 -1.133e-01 0.0071594 -0.275504 0.480971 0.795738 0.065208  
## 802 -4.295e-04 0.1665351 -0.098056 0.824204 0.916305 -0.017293  
## 803 -1.171e-02 -0.6903317 0.108144 -0.012338 0.484127 -0.043256  
## 804 -2.234e-01 -0.1849775 0.041357 0.047521 0.422483 -0.086018  
## 805 -4.595e-01 -0.1572779 0.621740 0.400228 0.417699 0.079710  
## 806 -7.891e-01 -0.2357415 0.949979 0.366747 -0.075847 0.395141  
## 807 2.033e-01 -0.7182813 -0.140313 0.113062 0.647489 0.034465  
## 808 6.814e-01 -0.5002834 -0.622598 0.867741 1.288364 -0.652724  
## 809 -2.812e-03 -0.7811664 -0.173037 0.772301 0.056891 -0.052233  
## 810 1.170e-01 -0.8418663 -0.110072 0.157999 0.581820 -0.196207  
## 811 9.693e-02 -0.7650274 -0.358872 0.021541 0.700478 0.448755  
## 812 2.748e-01 -0.5295955 -0.630616 0.406906 0.408508 0.141367  
## 813 -1.118e-01 -0.6481713 0.070353 0.023339 0.262327 -0.027108  
## 814 2.520e-01 -0.5942631 -0.413179 0.001392 0.935804 -0.172090  
## 815 4.425e-01 -0.7792435 -0.813541 0.136407 1.041924 -0.358277  
## 816 -1.934e-01 -0.9210841 -0.220538 -0.086723 0.454972 0.598956  
## 817 3.326e-02 -0.5157607 -0.181196 0.042133 0.394081 -0.017673  
## 818 5.151e-02 -0.8486317 -0.031686 0.273225 0.744188 -0.504490  
## 819 7.689e-02 -0.5737935 -0.151251 0.041667 0.438644 -0.108542  
## 820 -9.668e-02 -0.5353152 0.012846 -0.215149 0.032714 0.167388  
## 821 4.455e-01 -0.2902091 -0.773576 -0.165495 1.143374 -0.228505  
## 822 8.407e-05 -0.7260479 -0.517166 -0.694321 0.240529 0.292428  
## 823 -1.305e-01 -0.9037450 -0.651356 -0.612812 0.496900 0.291676  
## 824 -2.083e-01 -0.5912097 -0.114106 -0.005683 0.149294 0.404939  
## 825 -3.227e-01 -0.6924034 0.180777 -0.217579 0.109097 0.169465  
## 826 -5.241e-01 -0.4279302 0.243379 0.602580 0.566511 -0.314942  
## 827 9.356e-02 -0.6424482 -0.481455 -0.174495 0.746240 0.220997  
## 828 5.783e-02 -0.5253762 -0.051849 -0.153528 0.539406 -0.217809  
## 829 -3.199e-01 -0.3068515 0.084423 -0.947376 0.208368 0.552002  
## 830 3.234e-01 -0.5230405 -0.524891 0.355891 1.141799 -0.375534  
## 831 -1.019e-01 -0.6271566 -0.506767 -0.322231 0.463466 0.636377  
##   
##   
## Site constraints (linear combinations of constraining variables)  
##   
## CCA1 CA1 CA2 CA3 CA4 CA5  
## 1 -0.614957 0.9099819 -0.616046 -0.882450 1.435875 -0.332435  
## 2 -0.737494 0.9130474 -0.758911 -1.039490 -0.096233 1.419122  
## 3 -1.391026 1.4264777 -1.052872 -0.962421 1.057928 0.520823  
## 4 -0.839609 1.2996609 -1.878107 -0.785640 0.103505 0.910494  
## 5 -0.594534 0.7593566 -0.857089 -1.250832 0.918469 0.132441  
## 6 -0.860031 1.2316985 -0.714653 -1.753216 0.851416 0.313318  
## 7 -0.655803 0.4923193 -0.975104 -1.107904 0.471448 1.012073  
## 8 -0.900877 0.8727953 -0.157384 -0.652540 1.117558 0.134701  
## 9 -1.411449 0.6087188 -1.617879 -0.969989 1.405623 0.116609  
## 10 -0.757917 0.2474744 -0.558661 -0.771883 0.699309 -0.042720  
## 11 -1.779061 0.9587991 -0.929153 -0.804349 1.090355 -0.061462  
## 12 -0.737494 0.7170807 -0.261934 -1.500584 0.916186 0.868497  
## 13 -0.860031 1.2207548 0.410704 -1.785642 0.629373 0.025496  
## 14 -1.227643 -0.0351227 -1.166860 -0.929015 0.762064 -0.016883  
## 15 -1.738215 0.6405332 -1.989766 -1.097882 1.278102 -0.093654  
## 16 -0.880454 0.7352898 -0.369891 -1.382137 0.570057 0.678100  
## 17 -1.084683 0.8767227 0.882872 -0.572413 0.786921 0.401177  
## 18 -1.084683 1.1569010 -0.806939 -0.370521 0.040368 0.804188  
## 19 -1.574832 0.6632454 -1.416720 -0.816389 1.067590 -0.137003  
## 20 -1.370603 0.6885357 -0.199643 -0.716142 0.262552 0.268838  
## 21 -1.166374 0.3468576 -0.970409 -0.862203 1.000389 0.092969  
## 22 -1.166374 0.6967022 -0.423909 -0.672327 1.009539 -0.052325  
## 23 -1.452295 0.0654713 -0.169088 -0.123771 0.162994 0.396063  
## 24 -1.574832 -0.1491154 -1.675415 -1.118111 0.798337 0.416974  
## 25 -1.391026 -0.3172812 -1.014667 -0.997066 -0.068492 0.425171  
## 26 -1.472717 0.4172541 -1.411624 -1.343355 1.322753 0.781690  
## 27 -1.493140 -0.2590362 -0.890757 -0.777824 0.093385 0.187594  
## 28 -1.779061 0.2981478 -1.008817 -1.086473 0.369801 -0.134715  
## 29 -1.105106 0.6083767 -0.252672 -0.966891 0.672856 0.268565  
## 30 -1.166374 0.1542935 -0.992620 -1.218007 0.892401 1.075201  
## 31 -1.513563 -0.3516617 -1.315956 -0.691826 0.158805 0.184041  
## 32 -1.513563 0.2467249 -0.957818 -1.055455 0.447581 0.140430  
## 33 -1.391026 0.0314361 -0.919239 -0.973139 0.624768 0.657726  
## 34 -1.186797 0.6366894 -0.753091 -1.090919 1.287896 0.563440  
## 35 -1.840329 0.4730085 -1.111377 -0.819079 0.997690 0.354534  
## 36 -1.513563 -0.0232559 -0.524844 -0.726265 0.266807 0.609809  
## 37 -1.248066 0.7192811 0.402653 -1.538095 -0.335385 1.074643  
## 38 -1.329757 -0.4582612 -0.959869 -0.372705 0.548826 -0.181827  
## 39 -1.636100 -0.2304912 -1.163153 -0.485084 0.608568 -0.300270  
## 40 -1.636100 -0.5498545 -1.298221 -0.278913 0.364399 0.205687  
## 41 -1.799483 0.3247849 -2.461157 -1.514925 1.674738 0.218129  
## 42 -1.738215 0.0365928 -0.496538 -0.476246 0.276436 0.263399  
## 43 -1.636100 0.0347018 -0.575084 -0.526678 -0.248901 0.165292  
## 44 -1.799483 0.3557303 -1.084636 -0.511288 0.380001 -0.485792  
## 45 -1.636100 0.3815089 -0.031449 -0.763772 0.074357 0.691991  
## 46 -1.513563 -0.0553561 0.647534 0.234042 -0.278385 0.702471  
## 47 -1.452295 -0.1065596 0.647193 0.035869 -0.337831 0.737971  
## 48 -1.431872 0.1831957 0.480924 -0.449847 -0.085472 0.284223  
## 49 -2.024135 1.1416079 -2.014776 -0.719238 0.413425 0.594226  
## 50 -1.472717 0.6291477 -0.186020 -0.883114 0.593317 -0.089412  
## 51 -2.024135 0.7264396 0.458122 0.203386 1.006556 0.683723  
## 52 -1.268489 0.2558878 1.356479 -0.179268 -0.411659 0.978940  
## 53 -1.411449 0.6996218 1.060952 -0.553447 -0.177799 0.638459  
## 54 -1.452295 -0.1856015 -0.179347 -0.091296 0.225484 0.731969  
## 55 -1.513563 0.6640655 0.548185 -0.586938 0.123737 0.185945  
## 56 -1.452295 0.3956529 0.417914 -0.546612 0.290833 0.874588  
## 57 -1.411449 -0.5700311 -0.994480 -1.387187 -0.062450 1.136425  
## 58 -1.574832 0.4089094 0.361705 -1.040039 0.740244 1.935980  
## 59 -1.554409 0.8400561 0.763076 -0.313406 0.557334 0.477982  
## 60 -1.533986 1.3269185 0.108214 -1.321817 1.242156 0.809420  
## 61 -1.533986 0.6454807 0.226585 -0.076058 0.699368 0.055205  
## 62 -1.636100 0.8238058 0.314219 -0.132871 1.040323 0.986767  
## 63 -1.554409 0.8491421 0.475809 -0.508830 0.862070 0.887352  
## 64 -1.615678 0.5269738 1.597622 0.267473 -0.581086 -0.245322  
## 65 -1.636100 0.4905625 1.303768 0.340114 -0.075816 0.594064  
## 66 -1.595255 0.8380323 0.099985 -0.477258 1.014565 0.205069  
## 67 -1.656523 0.4227785 1.152063 0.141331 0.050372 0.659417  
## 68 -1.676946 0.3231692 -0.075008 -0.848176 0.114173 0.790168  
## 69 -1.738215 1.2916597 1.333653 -0.263286 0.672557 0.314016  
## 70 -1.227643 0.8915045 0.352355 -0.031894 0.688371 0.289608  
## 71 -1.227643 1.2171702 1.184962 0.007028 0.699474 -0.182997  
## 72 -1.227643 0.9968925 0.828742 -0.374000 0.830595 0.847266  
## 73 -1.227643 1.6941940 0.976988 -0.233324 1.142110 -0.105206  
## 74 -1.227643 0.9832196 0.782338 -0.390443 -0.146394 -0.561496  
## 75 -1.391026 1.2552995 0.473766 0.746867 0.983710 0.353217  
## 76 -1.370603 1.2359937 1.004204 0.582860 -0.237488 -1.362857  
## 77 -1.472717 1.4197040 -0.191014 -0.079480 0.845091 -0.104827  
## 78 -1.493140 0.9461051 0.504462 0.757538 0.626323 0.154930  
## 79 -0.900877 1.2441824 1.033406 0.078621 0.953093 -0.495465  
## 80 -0.900877 1.5994000 1.761429 0.250879 1.191903 0.160111  
## 81 -1.533986 0.7362725 0.786329 0.587064 -0.727403 -0.987301  
## 82 -1.533986 1.2447288 0.885321 0.668587 0.651858 -0.312896  
## 83 -1.533986 1.0637729 0.754282 0.524369 0.311800 0.638630  
## 84 -1.574832 1.3098403 0.506789 0.225709 0.434964 -0.444453  
## 85 -1.554409 1.4427363 2.107450 0.833428 -0.077691 -0.102041  
## 86 -1.554409 1.5313563 0.764200 0.930496 0.196492 -0.761338  
## 87 -1.595255 1.2695405 0.088828 0.425321 0.576274 -0.325637  
## 88 -1.574832 0.4656602 -0.275306 0.871003 0.581182 -0.511314  
## 89 -1.615678 1.0518390 -0.450136 0.110444 0.330318 -1.088542  
## 90 -1.717792 1.2066347 -0.425873 0.433745 1.683117 -0.122936  
## 91 -1.554409 1.3840122 2.170849 0.331128 -0.383140 -0.022486  
## 92 -1.656523 1.4920739 2.563775 1.332305 -0.107223 0.434481  
## 93 -1.840329 1.3129687 -0.312738 0.908050 0.531525 -0.522324  
## 94 -2.146672 1.2098022 -0.434067 0.746454 0.852107 -0.191854  
## 95 -1.799483 1.4932848 0.326914 0.390965 1.040058 -0.981119  
## 96 -1.840329 0.8049671 0.306778 1.007420 0.333171 -0.172116  
## 97 -1.697369 1.0110564 1.944944 1.066535 -0.924152 -0.552547  
## 98 -2.003712 1.8263692 0.681261 0.230180 0.541258 -0.914809  
## 99 -1.942443 1.5400078 0.733692 0.338262 0.273432 -1.083001  
## 100 -1.840329 0.8138182 0.653577 0.760170 -1.226464 -0.664498  
## 101 -1.697369 2.0905235 2.697992 1.158612 -0.081471 -1.059661  
## 102 -1.799483 2.1640404 1.800975 1.396696 0.550763 -1.213308  
## 103 -1.779061 1.3891232 0.942623 0.952012 0.114608 -1.068492  
## 104 -1.819906 0.5109852 0.494994 0.292558 -0.583088 -0.699868  
## 105 -1.758638 0.7315552 1.425618 0.196815 -0.902103 -0.434791  
## 106 -1.758638 1.5124756 4.289653 1.756963 -1.506365 -0.861802  
## 107 -1.758638 0.9465759 2.771760 0.873608 -1.242838 -0.501563  
## 108 -1.758638 0.7212550 2.622773 1.087817 -0.813361 0.057404  
## 109 -1.738215 0.4718387 1.557872 0.739008 -0.684365 -0.231040  
## 110 -1.758638 0.8764296 2.525142 1.177478 -0.974182 -0.055998  
## 111 -1.779061 1.4252356 1.718009 0.494590 -0.610277 -1.887332  
## 112 -1.779061 0.0704666 1.620607 0.514693 -2.315101 -0.942636  
## 113 -1.799483 0.7113545 2.117428 0.556400 -2.878220 -2.997161  
## 114 -1.799483 0.4660374 0.974853 0.344716 -0.844622 -0.578986  
## 115 -0.369883 -0.5959270 -0.963632 -0.724059 0.291359 1.066820  
## 116 -0.308614 0.1858180 -0.957237 -0.756560 0.750424 -0.174038  
## 117 -0.349460 0.2374904 -1.152391 0.170566 1.416278 -0.316458  
## 118 -0.329037 -0.1266522 0.694853 -1.042323 -0.392519 0.887321  
## 119 -0.798763 -0.5172699 -2.072131 -1.852993 0.496956 0.560623  
## 120 -0.798763 -0.6699714 -1.904240 -1.921278 0.243942 0.625391  
## 121 -0.819186 -0.6741458 -1.187451 -1.526226 -1.114182 -1.271302  
## 122 -0.860031 -1.1948920 -1.657141 -1.126618 -0.407003 0.325315  
## 123 -0.880454 -0.8977377 -1.602716 -0.817072 0.008270 0.075557  
## 124 -1.002991 -0.6549822 -1.663766 -0.823865 0.571163 -0.216782  
## 125 -1.023414 -0.6761329 -1.884019 -1.365396 -0.768573 -0.893958  
## 126 -1.002991 -0.9655176 -1.721520 -0.564896 0.354825 -0.129422  
## 127 -1.023414 -0.5997134 -1.863599 -1.427051 -0.709206 -0.901591  
## 128 -0.737494 -0.8517451 -0.675830 -1.392248 -0.577026 -0.040083  
## 129 -1.084683 -1.0018498 -1.734001 -0.951640 -0.474480 -0.828049  
## 131 -1.064260 -1.0895040 -1.761086 -1.026875 0.019363 -0.234968  
## 132 -1.125529 -0.7917703 -1.573443 -1.029634 -1.029288 -1.407982  
## 133 -1.105106 -0.9322241 -1.670878 -0.736946 0.125315 0.414992  
## 134 -0.676226 -1.1390176 -1.271298 -2.084963 -0.457879 1.080527  
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## 139 -0.757917 -1.1348569 -0.666864 -0.766150 -1.475806 -1.726641  
## 140 -0.757917 -1.4069989 -0.444958 -1.074081 -2.683806 -1.963417  
## 141 -0.533265 -0.9274317 -0.884608 -1.113353 -1.624428 -2.079718  
## 142 -0.533265 -1.4577473 -0.460087 -1.354596 -3.213773 -1.848484  
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## 145 -1.391026 -0.9910245 -1.250807 -0.271581 -2.141410 -3.576852  
## 146 -1.411449 -0.9925216 -1.151048 -0.994015 -2.892372 -2.722254  
## 147 -0.492420 -0.5061361 0.034204 -0.624087 -0.322344 -0.066458  
## 148 -0.655803 -0.2963650 -0.440076 -0.819129 0.166487 -0.194742  
## 149 -0.819186 0.1103225 0.253973 -0.524775 -0.607387 -1.061610  
## 150 -0.819186 -0.2405410 -0.267185 -0.848610 -0.519178 -0.443984  
## 151 -1.145952 -0.8186599 0.510187 -0.744170 -4.234358 -4.520025  
## 152 -1.145952 -1.0021641 0.481073 -0.637209 -4.456731 -4.586785  
## 153 -1.125529 -1.0335458 0.520444 -1.174472 -6.680635 -6.832557  
## 154 -1.186797 -1.0680747 -0.039101 -1.255423 -5.371678 -4.690429  
## 155 -0.819186 -0.4901643 -0.785768 -1.308666 0.246407 0.877055  
## 156 -0.798763 -0.4782519 0.071119 -0.933882 -0.506857 0.446333  
## 157 -0.757917 0.0001437 -0.188217 -1.567311 -0.750824 0.393615  
## 158 -0.941723 -0.4713503 0.015987 -0.917584 -0.448542 1.086958  
## 159 -1.554409 -0.7331390 -1.597353 0.228258 0.543068 -2.467525  
## 160 -1.554409 -0.6579426 -1.803917 -0.013655 0.463148 -2.170211  
## 161 -1.554409 -0.7073280 -1.681835 -0.031843 0.075914 -2.842644  
## 162 -1.533986 0.1158859 -1.025022 -1.429610 -0.054751 -0.604363  
## 163 -0.860031 -0.6679226 -1.145211 -1.469957 -0.942768 -1.235088  
## 164 -1.574832 -0.8358625 -1.970232 -0.081484 -1.040338 -4.531621  
## 165 -1.391026 -1.0922082 -1.720910 -0.174809 -0.439680 -2.247320  
## 166 -0.900877 -0.7473437 -1.246268 -0.995516 -0.954492 -1.552634  
## 167 -1.186797 -0.7709920 -1.113145 -0.652357 -1.670256 -3.387948  
## 168 -1.002991 -0.8153393 -0.990799 -0.898229 -0.148420 0.592681  
## 169 -1.513563 -1.1626779 -0.157181 -0.460217 -2.023933 0.863999  
## 170 -2.371324 -0.2306516 -0.412262 0.029751 -3.487342 -4.043814  
## 171 -1.676946 -0.3383675 0.465248 -0.462859 -4.460035 -4.923663  
## 172 -2.187518 -0.3213123 -0.864826 0.365377 -0.353376 -0.555360  
## 173 -1.717792 -0.4061047 -0.429859 -1.250736 -2.918493 -2.255736  
## 174 -1.901598 0.2005949 0.753327 0.336211 -1.896262 -1.256306  
## 175 -2.024135 -0.5215029 -1.961830 -1.074463 0.332480 0.127546  
## 176 -2.024135 -0.2673096 -2.103712 -1.172585 0.345792 0.131958  
## 177 -2.044558 0.4882829 2.466870 1.190325 -0.979225 0.867063  
## 178 0.875912 -1.1220467 0.811331 0.192022 0.234860 0.402592  
## 179 -0.655803 -1.1030787 0.370085 -0.151526 -1.356424 0.691289  
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## 181 -0.512843 -0.8332814 -0.303220 -0.137907 0.472042 1.032690  
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## 638 0.161112 0.0428448 -1.092157 0.271499 0.709833 -0.323687  
## 639 0.079421 -0.1955731 -1.042361 0.520858 0.999370 -0.099807  
## 640 0.058998 -0.0606592 -0.742155 -0.299315 1.030318 -0.170005  
## 641 0.161112 -0.1073259 -0.674162 -0.115077 0.964391 0.104111  
## 642 0.099843 -0.2749412 -0.896310 -0.168204 0.756230 -0.447617  
## 643 0.140689 0.0275185 -1.109327 0.102530 0.896212 -0.567996  
## 644 0.099843 -0.2125293 -0.944071 -0.259097 0.755737 -0.734314  
## 645 0.181535 -0.0328923 -0.725674 -0.873465 0.419087 -0.294810  
## 646 0.161112 -0.2288928 -0.792616 -0.748631 0.360657 -0.892614  
## 647 0.161112 -0.2398929 -0.573870 -0.190829 0.638262 -0.598651  
## 648 0.079421 -0.0325892 -1.098483 0.157718 0.858761 -1.107882  
## 649 0.201958 -0.2345904 -0.850225 -0.543058 0.627200 -0.244666  
## 650 -0.002271 -0.0001182 -0.629232 -0.870940 0.595152 -1.030904  
## 651 -0.002271 -0.4822057 -0.806735 -0.133766 0.604290 -0.481058  
## 652 -0.002271 -0.0665797 -0.984688 0.109100 0.987577 -0.227276  
## 653 0.161112 0.4635162 -0.530100 -1.104218 1.078624 0.140016  
## 654 0.058998 -0.2125619 -0.907711 -0.233990 0.849522 -0.726898  
## 655 -0.002271 -0.2315835 -1.192220 -0.550458 1.097859 -0.022415  
## 656 0.038575 -0.1881473 -0.769767 -0.357947 0.759728 -0.085808  
## 657 0.099843 -0.5384009 -0.607767 -0.644945 0.259375 0.638385  
## 658 -0.002271 -0.1612368 -0.791837 -0.393378 0.857677 -0.245924  
## 659 0.038575 -0.0611713 0.660370 -1.227322 0.224890 0.467118  
## 660 -0.308614 -1.1635383 -0.483300 -0.016475 0.136487 0.412304  
## 661 -0.614957 -1.0830518 -0.387089 -0.995744 -0.315428 1.502202  
## 662 -0.594534 -1.0735050 -0.188323 -1.030018 -0.340307 2.103055  
## 663 -0.308614 -1.3156215 -0.170698 -0.691126 -0.376942 1.670808  
## 664 0.365341 -1.7648233 -0.257687 -0.766626 0.068763 1.392166  
## 665 -0.512843 -1.2615664 -0.017756 -1.010788 -0.493486 2.099525  
## 666 -0.533265 -0.7889640 0.481590 -0.070315 -0.732944 -0.284191  
## 667 0.263226 -1.4745278 0.506432 -0.869469 -0.718032 1.645918  
## 668 -0.226922 -1.2026675 -0.072784 -0.914821 -0.370529 1.748707  
## 669 -0.267768 -1.1321996 -0.249773 -0.864925 -0.080850 1.721937  
## 670 0.589992 -1.5843270 0.585139 -0.639700 -1.090350 0.767632  
## 671 0.651261 -1.0939985 0.558424 0.293771 -0.015478 0.166921  
## 672 0.018152 -1.2401058 -0.223092 0.162879 0.281311 0.640436  
## 673 0.099843 -1.1187161 0.005518 0.015685 0.060625 0.512467  
## 674 0.324495 -1.1157491 0.455857 0.652291 0.230863 0.268937  
## 675 0.222381 -1.3375779 0.638196 -0.138747 -1.080620 -0.306627  
## 676 -0.124808 -1.4014327 -0.005481 -0.706158 -0.130076 1.754973  
## 677 0.692107 -1.2593778 0.116009 0.485749 0.677259 -0.273458  
## 678 1.059718 -1.0543582 0.584158 0.121359 0.413143 -0.895978  
## 679 -0.083962 -1.1784988 -0.479799 0.128320 0.472457 0.725435  
## 680 -0.247345 -1.3822963 -0.329435 -0.684029 -0.084930 1.424575  
## 681 -0.165654 -1.2047412 -0.611212 -0.883324 0.075324 1.655567  
## 682 0.365341 -0.9657234 -0.396777 0.811959 1.276873 -0.394979  
## 683 0.365341 -0.9681569 -0.318130 0.920434 1.230014 -0.255882  
## 684 -0.124808 -0.7436966 -0.003714 0.273655 -0.193843 -2.018029  
## 685 0.528724 -1.2874448 0.168896 0.344826 1.050417 0.195353  
## 686 0.181535 -0.9431983 0.045381 -0.286079 0.360885 0.572564  
## 687 -0.124808 -1.0824000 -0.388755 0.301533 0.536069 0.509731  
## 688 -0.349460 -1.3037429 0.468060 -0.713549 -0.632365 1.514191  
## 689 -0.329037 -1.4833516 -0.322808 -0.855490 -1.850112 -0.555107  
## 690 -0.247345 -0.8664379 -0.052032 0.129555 -0.123079 0.489143  
## 691 -0.329037 -0.8015444 -0.686341 0.710334 0.930614 0.018426  
## 692 0.508301 -1.1203187 0.413440 -0.026773 0.298557 0.754246  
## 694 -0.369883 -1.1991399 -0.412582 -0.575498 -0.141734 1.173092  
## 695 0.753375 -1.0118620 0.304605 0.615958 -0.132189 -1.015993  
## 696 0.916758 -1.4231805 0.926719 0.126841 0.320442 -0.234489  
## 697 -0.308614 -1.0125705 -0.348418 0.106522 0.488522 0.415016  
## 698 0.201958 -1.0121361 -0.486684 0.090954 0.554098 0.234762  
## 699 -0.083962 -1.3517357 -0.157234 -0.372911 -1.026598 -0.200473  
## 700 0.671684 -1.1373776 0.668332 -0.235820 -0.226916 -0.081146  
## 701 0.058998 -0.8390509 0.201752 0.255678 0.294980 0.575602  
## 702 0.549147 -0.8865405 -0.284176 0.895661 0.467692 0.273166  
## 703 0.487878 -0.8478760 -0.424489 0.662150 0.152418 0.424672  
## 704 -0.206500 -1.0079384 -0.209946 -0.223477 0.396286 0.748254  
## 705 0.875912 -0.9962100 0.589715 0.433840 0.209549 0.211288  
## 706 0.079421 -0.8025570 0.476878 0.508939 0.048843 1.003404  
## 707 0.528724 -0.9045770 0.953889 0.232289 -0.356443 -0.019443  
## 708 0.487878 -1.3514510 -0.046920 0.369976 -0.293973 -3.078066  
## 709 0.855490 -1.0372089 0.303061 0.682378 0.172695 -0.188231  
## 710 0.794221 -0.9229812 0.644287 -0.368782 -0.784036 -0.969187  
## 711 -0.512843 -0.8007436 -0.529779 0.373517 0.987901 0.058709  
## 712 -0.165654 -0.9270405 0.127502 -0.058730 0.256632 0.944832  
## 713 0.283649 -1.0534943 0.761405 -0.137182 0.024387 0.660494  
## 714 -0.124808 -1.3692518 -0.372954 -0.310429 -0.173930 0.620598  
## 715 -0.063539 -1.3770029 -0.468684 -0.483874 0.195658 1.048813  
## 716 0.018152 -0.8305496 -0.129957 0.024188 0.302197 0.248377  
## 717 0.528724 -1.2075277 -0.045558 0.388803 0.445355 -1.088151  
## 718 0.058998 -1.3897701 -0.344414 -0.543052 0.038947 0.980536  
## 719 0.038575 -1.2041397 -0.208351 -0.804886 -0.628745 0.740163  
## 720 0.120266 -1.2027781 0.730224 -0.400731 -0.653808 1.108133  
## 721 0.099843 -1.3627418 -0.022926 -0.353097 0.431739 1.195454  
## 722 -0.022694 -1.4064849 -0.024726 -0.631321 -1.357906 -0.425975  
## 723 -0.104385 -1.1534168 -0.193587 -0.191608 0.528433 0.726063  
## 724 0.079421 -1.1601518 -0.034398 -0.753128 -0.122863 1.116427  
## 725 -0.063539 -0.9955708 0.324059 -0.671456 0.045822 1.819536  
## 726 -0.043117 -1.1066867 0.021847 -0.852976 -1.106803 0.652381  
## 727 0.038575 -1.0636942 -0.010856 -0.494037 -0.151142 0.831434  
## 728 -0.002271 -1.1722540 0.453365 -0.508781 -0.256594 0.822552  
## 729 0.018152 -1.3937860 -0.166401 -0.659301 -0.110775 1.459128  
## 730 -0.043117 -1.4232011 -0.008024 -0.625537 -0.586908 1.575078  
## 731 -0.063539 -0.8511783 1.257540 -0.470147 -0.805893 1.894271  
## 732 -0.063539 -0.7930524 1.028456 -0.265235 -0.058279 1.501965  
## 733 0.120266 -1.2067625 0.745587 -0.606443 -0.541524 1.436671  
## 734 -0.104385 -1.0226924 0.623544 -0.261125 -0.345696 1.240817  
## 735 -0.145231 -1.1053955 0.430962 -0.410341 -0.375268 1.344066  
## 736 0.201958 -1.8061965 0.416362 -0.501320 -1.177573 1.865066  
## 737 -0.145231 -1.2099498 0.120187 0.719809 0.178655 0.682886  
## 738 0.304072 -1.4232322 0.717626 -0.631972 -0.504548 1.439612  
## 739 0.242804 -1.2678673 0.080834 0.326590 0.382138 0.451401  
## 740 0.161112 -1.3555442 0.485287 -0.178819 -0.336206 0.174413  
## 741 0.283649 -1.5002659 0.162809 -0.414081 -1.099489 -0.253633  
## 742 0.304072 -1.2782040 0.328546 0.428170 0.135730 0.260252  
## 743 -0.329037 -1.3567263 -0.204858 0.508755 0.794292 0.818964  
## 744 0.283649 -1.1778212 0.461241 0.173877 -0.742908 -0.044357  
## 745 -0.288191 -0.9717088 -0.195988 0.784382 1.278336 0.096164  
## 746 0.283649 -1.5358948 0.791254 -0.765723 -1.769839 0.815086  
## 747 0.181535 -1.0152291 -0.041036 1.045153 0.926809 -0.205082  
## 748 0.201958 -1.4922199 0.528956 -0.774058 -0.753336 1.274364  
## 749 0.406187 -1.1270400 0.280730 0.054763 0.222289 0.677818  
## 750 0.304072 -1.5184889 1.165281 -1.058555 -1.540721 1.727100  
## 751 0.099843 -1.2376101 1.280039 -0.668678 -1.958056 0.858100  
## 752 0.181535 -1.7130363 0.566915 -0.740642 -1.519763 1.779093  
## 753 0.406187 -2.0449327 1.153563 -0.984042 -2.774587 1.906499  
## 754 0.058998 -1.5155241 0.823745 -1.009879 -2.407383 0.972250  
## 755 0.222381 -1.6895617 0.351255 -1.199411 -1.078809 2.108518  
## 756 0.263226 -1.7557368 0.207266 -0.994459 -1.434308 1.072217  
## 757 -0.002271 -1.3820471 0.170874 0.353775 0.366330 0.405891  
## 758 -0.267768 -1.3427234 0.369445 -0.818300 -1.782321 0.245664  
## 759 0.018152 -1.2466817 0.725662 0.401596 -0.001682 0.329767  
## 760 -0.431151 -1.2600149 -0.137182 -0.525590 -0.609382 1.305408  
## 761 -0.226922 -1.7297918 -0.642509 -0.630038 -0.426689 1.217330  
## 762 0.283649 -1.6218444 -0.003883 -0.034336 -0.921018 1.093623  
## 763 0.018152 -1.4401306 0.094878 0.064832 -0.115404 1.240823  
## 764 0.263226 -1.3742282 0.648157 -0.056388 -1.105787 0.586730  
## 765 -0.145231 -1.0161947 0.010834 0.052398 -0.666520 -0.207786  
## 766 0.120266 -0.8305790 0.672134 0.820424 0.334968 0.035263  
## 767 0.324495 -0.2364390 -0.440612 0.483331 1.057471 -0.673933  
## 768 0.283649 -0.1221372 -0.247068 0.609777 0.599618 -0.123570  
## 769 0.181535 0.2634151 -0.426559 0.573632 0.801260 -0.870496  
## 770 0.508301 -0.8258176 -0.097574 0.926299 0.652617 -0.607421  
## 771 0.099843 -1.0409757 0.490755 0.340203 -0.243095 0.232631  
## 772 0.283649 -0.3112057 -0.341724 0.808089 0.716560 -0.805146  
## 773 0.426609 -1.0890096 0.564157 0.315303 -0.337432 -0.341828  
## 774 0.018152 -0.8823445 -0.194927 0.023957 -0.018464 0.198411  
## 775 0.263226 -0.3846043 -0.688406 0.970279 0.828994 -0.922198  
## 776 0.099843 -0.1693500 -0.696624 0.973690 1.179503 -1.090084  
## 777 0.365341 -0.4001108 -0.053812 0.913587 1.234336 -0.336121  
## 778 0.079421 -0.3623829 -0.706878 0.955355 0.969008 -0.611736  
## 779 0.058998 -0.2519121 -0.660366 1.208747 1.057630 -0.962187  
## 780 -0.124808 -0.1902624 -1.058178 0.677628 0.118469 -1.861677  
## 781 0.222381 -0.4696065 0.036140 0.588665 0.659491 -1.170060  
## 782 0.181535 -0.5479441 -0.242831 0.672808 1.375569 -0.395845  
## 783 0.201958 -0.5042904 -0.031956 0.285006 0.928028 -0.870160  
## 784 0.161112 -0.7123152 -0.432016 0.492938 1.198312 -0.584325  
## 785 0.161112 -0.6919761 -0.671976 0.821569 0.978394 -0.453791  
## 786 0.140689 -0.2180404 -0.125617 0.645254 1.720117 -0.777157  
## 787 0.140689 -0.6084438 -0.441416 0.859107 1.302743 -2.337031  
## 788 0.140689 -0.9399298 -0.544328 0.485403 0.968986 -0.369216  
## 789 -0.165654 -0.0609311 0.658339 0.359084 0.344463 0.507435  
## 790 -0.226922 -0.0075432 0.553024 0.421130 0.268391 -0.751035  
## 791 -0.349460 -0.1632854 -0.069629 0.508373 0.684670 -0.614769  
## 792 0.079421 -1.0980743 -0.711834 0.797037 1.395769 -1.077469  
## 793 0.140689 -0.8580386 0.092906 0.381213 0.333778 -0.062126  
## 794 -0.206500 -0.1263120 0.351431 0.312092 0.571733 -0.689021  
## 795 -0.369883 -0.2609987 -0.120957 0.396899 0.006185 -0.205850  
## 796 -0.349460 0.2230800 0.506805 0.375980 0.851562 -0.097696  
## 797 -0.471997 -0.0577849 -0.420413 0.429235 0.904694 -0.239455  
## 798 -0.369883 -0.0303290 0.254094 0.571711 0.785320 -0.469188  
## 799 -0.471997 0.0541959 0.616077 0.578224 0.665994 0.201809  
## 800 -0.492420 0.1381214 0.730329 0.924535 0.400695 -0.469991  
## 801 -0.553688 0.0071594 -0.275504 0.480971 0.795738 0.065208  
## 802 -0.512843 0.1665351 -0.098056 0.824204 0.916305 -0.017293  
## 803 0.079421 -0.6903317 0.108144 -0.012338 0.484127 -0.043256  
## 804 -0.390305 -0.1849775 0.041357 0.047521 0.422483 -0.086018  
## 805 -0.267768 -0.1572779 0.621740 0.400228 0.417699 0.079710  
## 806 -0.308614 -0.2357415 0.949979 0.366747 -0.075847 0.395141  
## 807 0.120266 -0.7182813 -0.140313 0.113062 0.647489 0.034465  
## 808 0.079421 -0.5002834 -0.622598 0.867741 1.288364 -0.652724  
## 809 0.038575 -0.7811664 -0.173037 0.772301 0.056891 -0.052233  
## 810 0.058998 -0.8418663 -0.110072 0.157999 0.581820 -0.196207  
## 811 0.058998 -0.7650274 -0.358872 0.021541 0.700478 0.448755  
## 812 0.018152 -0.5295955 -0.630616 0.406906 0.408508 0.141367  
## 813 0.038575 -0.6481713 0.070353 0.023339 0.262327 -0.027108  
## 814 0.079421 -0.5942631 -0.413179 0.001392 0.935804 -0.172090  
## 815 0.018152 -0.7792435 -0.813541 0.136407 1.041924 -0.358277  
## 816 0.038575 -0.9210841 -0.220538 -0.086723 0.454972 0.598956  
## 817 -0.043117 -0.5157607 -0.181196 0.042133 0.394081 -0.017673  
## 818 -0.002271 -0.8486317 -0.031686 0.273225 0.744188 -0.504490  
## 819 0.018152 -0.5737935 -0.151251 0.041667 0.438644 -0.108542  
## 820 -0.043117 -0.5353152 0.012846 -0.215149 0.032714 0.167388  
## 821 -0.002271 -0.2902091 -0.773576 -0.165495 1.143374 -0.228505  
## 822 -0.002271 -0.7260479 -0.517166 -0.694321 0.240529 0.292428  
## 823 -0.002271 -0.9037450 -0.651356 -0.612812 0.496900 0.291676  
## 824 -0.063539 -0.5912097 -0.114106 -0.005683 0.149294 0.404939  
## 825 -0.063539 -0.6924034 0.180777 -0.217579 0.109097 0.169465  
## 826 -0.553688 -0.4279302 0.243379 0.602580 0.566511 -0.314942  
## 827 0.018152 -0.6424482 -0.481455 -0.174495 0.746240 0.220997  
## 828 -0.022694 -0.5253762 -0.051849 -0.153528 0.539406 -0.217809  
## 829 -0.186077 -0.3068515 0.084423 -0.947376 0.208368 0.552002  
## 830 -0.186077 -0.5230405 -0.524891 0.355891 1.141799 -0.375534  
## 831 -0.165654 -0.6271566 -0.506767 -0.322231 0.463466 0.636377  
##   
##   
## Biplot scores for constraining variables  
##   
## CCA1 CA1 CA2 CA3 CA4 CA5  
## arctic.env$tmax 1 0 0 0 0 0

summary(arctic\_pollen\_cca\_tave)

##   
## Call:  
## cca(formula = arctic\_pollen\_sqrt ~ arctic.env$tave)   
##   
## Partitioning of scaled Chi-square:  
## Inertia Proportion  
## Total 1.1409 1.0000  
## Constrained 0.1148 0.1006  
## Unconstrained 1.0261 0.8994  
##   
## Eigenvalues, and their contribution to the scaled Chi-square   
##   
## Importance of components:  
## CCA1 CA1 CA2 CA3 CA4 CA5 CA6  
## Eigenvalue 0.1148 0.1880 0.1165 0.06244 0.05026 0.03915 0.03630  
## Proportion Explained 0.1006 0.1648 0.1021 0.05473 0.04405 0.03432 0.03182  
## Cumulative Proportion 0.1006 0.2655 0.3675 0.42227 0.46632 0.50063 0.53245  
## CA7 CA8 CA9 CA10 CA11 CA12  
## Eigenvalue 0.03332 0.03206 0.02908 0.0275 0.02582 0.02515  
## Proportion Explained 0.02920 0.02810 0.02549 0.0241 0.02263 0.02204  
## Cumulative Proportion 0.56166 0.58976 0.61524 0.6393 0.66198 0.68402  
## CA13 CA14 CA15 CA16 CA17 CA18  
## Eigenvalue 0.02331 0.02258 0.02082 0.01928 0.01890 0.01839  
## Proportion Explained 0.02043 0.01979 0.01825 0.01690 0.01657 0.01612  
## Cumulative Proportion 0.70445 0.72424 0.74249 0.75939 0.77596 0.79207  
## CA19 CA20 CA21 CA22 CA23 CA24  
## Eigenvalue 0.01751 0.01716 0.01613 0.01534 0.01444 0.01365  
## Proportion Explained 0.01534 0.01504 0.01414 0.01345 0.01266 0.01197  
## Cumulative Proportion 0.80742 0.82246 0.83660 0.85005 0.86271 0.87468  
## CA25 CA26 CA27 CA28 CA29 CA30  
## Eigenvalue 0.01288 0.01278 0.01224 0.01192 0.011298 0.010834  
## Proportion Explained 0.01129 0.01120 0.01073 0.01045 0.009903 0.009496  
## Cumulative Proportion 0.88597 0.89717 0.90789 0.91834 0.928247 0.937743  
## CA31 CA32 CA33 CA34 CA35  
## Eigenvalue 0.010516 0.010091 0.009772 0.009292 0.008458  
## Proportion Explained 0.009217 0.008844 0.008565 0.008144 0.007413  
## Cumulative Proportion 0.946960 0.955804 0.964370 0.972514 0.979927  
## CA36 CA37 CA38  
## Eigenvalue 0.008251 0.007528 0.007124  
## Proportion Explained 0.007232 0.006598 0.006244  
## Cumulative Proportion 0.987158 0.993756 1.000000  
##   
## Accumulated constrained eigenvalues  
## Importance of components:  
## CCA1  
## Eigenvalue 0.1148  
## Proportion Explained 1.0000  
## Cumulative Proportion 1.0000  
##   
## Scaling 2 for species and site scores  
## \* Species are scaled proportional to eigenvalues  
## \* Sites are unscaled: weighted dispersion equal on all dimensions  
##   
##   
## Species scores  
##   
## CCA1 CA1 CA2 CA3 CA4 CA5  
## F.PABI 1.025182 1.43519 0.809004 -1.310512 1.635586 -0.03539  
## F.BALN 0.106496 0.13554 -0.364256 0.014447 -0.117155 0.06810  
## F.CAMB 0.268393 0.43207 0.577997 0.514620 0.245143 -0.18842  
## F.APIA 0.796522 -1.33558 0.097033 -0.616506 -0.858266 0.48353  
## F.CART -0.170048 0.02016 0.070971 0.295684 -0.046576 0.15254  
## F.TULI -0.006185 -0.14141 -0.008145 0.196441 0.039729 0.23146  
## F.BBET 0.182650 -0.01034 -0.267577 -0.006323 -0.036827 -0.06607  
## F.BRAS -1.059069 -0.10437 0.571884 -0.624409 -0.286353 0.55331  
## F.CARY -0.658003 -0.48695 0.580396 -0.222359 0.075097 0.01115  
## F.CHEN 0.110250 0.47553 0.691262 0.735559 -0.297412 -0.06994  
## F.BCOR 0.650267 0.28218 1.366367 0.803885 -0.622282 0.41163  
## F.CUPR 0.398134 -0.05273 -0.174163 0.158234 -0.628692 -1.04173  
## F.CYPE -0.157679 -0.32268 -0.045975 0.104556 0.175772 0.01629  
## F.RDRY -1.270711 -0.20030 0.891835 -0.424934 -0.178830 0.24036  
## F.ELAE -0.334546 0.28661 -1.147103 0.230215 -0.615907 -0.66566  
## F.ERIC 0.069026 -0.54593 0.043768 0.280910 0.376664 -0.15431  
## F.FABA -0.486684 -0.39294 0.360396 0.287374 0.373303 0.24449  
## F.FFAG 1.093562 1.27445 0.832581 -1.335292 1.396232 -0.97123  
## F.OFRA 0.699432 0.72699 1.183272 0.356656 0.337011 -0.15966  
## F.PLAR 0.626054 1.10311 0.327178 0.065491 0.253379 -0.20760  
## F.MMYR 0.290495 0.74732 -0.171338 0.187739 -0.637539 -0.16795  
## F.ONAG 0.032724 -0.25547 0.195757 0.111992 0.242094 0.40784  
## F.POXR -0.998674 -0.34757 0.793083 -0.503686 -0.252475 -0.09339  
## F.PAPA -1.701924 -0.11737 1.298439 -0.752648 -0.533369 -0.08465  
## F.PPIC 0.275876 0.62242 -0.130565 -0.184356 0.046099 -0.04503  
## F.PPIN 0.125535 0.64792 0.671077 0.453412 -0.176704 0.07610  
## F.PPLA -0.683558 0.02362 0.554181 -0.687564 -0.887976 0.23340  
## F.POAC -0.096621 -0.49472 0.019924 -0.084298 0.004813 0.12721  
## F.POLE 0.495258 -0.85207 -0.865399 -0.550206 -0.473372 3.27930  
## F.POLY -0.518205 -0.64078 0.321132 0.192951 0.527072 -0.14525  
## F.SPOP 0.336332 0.14924 -0.545261 -0.191560 -0.500618 0.23793  
## F.FQUE 0.912912 1.10314 1.128039 0.484007 -0.193404 -0.04677  
## F.RANU -0.422917 -0.64265 0.283565 -0.381652 -0.273581 -0.18428  
## F.ROSA -0.358699 -0.31765 0.038006 -0.090771 -0.075847 0.38697  
## F.SSAL -0.253338 -0.40711 0.160242 -0.049525 -0.051863 -0.16699  
## F.SAXI -1.151542 -0.24177 0.763264 -0.418738 -0.185000 0.29901  
## F.SCRO -0.764441 -0.66158 0.512592 -0.349200 -0.057903 -0.01685  
## F.RTHA 0.576067 -1.23734 0.696946 -0.870802 -1.006643 -1.93735  
## F.ULMA 0.919600 0.91813 1.121913 0.816667 -0.562793 0.05307  
##   
##   
## Site scores (weighted averages of species scores)  
##   
## CCA1 CA1 CA2 CA3 CA4 CA5  
## 1 -3.071e-03 0.4098269 0.685043 1.490370 -0.203050 1.496e-01  
## 2 -3.513e-01 0.1295345 1.083965 0.941558 1.772352 1.446e-01  
## 3 -4.365e-01 0.5309538 1.105342 1.537697 0.720088 4.451e-01  
## 4 5.770e-01 0.7195442 0.839601 1.083123 2.048062 -3.595e-01  
## 5 -6.717e-02 0.2688759 0.709777 1.677637 0.828011 -4.893e-01  
## 6 -1.443e-01 0.3462375 1.332996 1.914026 0.420830 3.286e-01  
## 7 -1.880e-02 -0.1834813 0.799825 1.160375 1.335558 3.150e-01  
## 8 -9.986e-01 0.0072297 1.021005 0.994298 0.311268 8.891e-02  
## 9 -1.520e-01 0.0545214 0.380910 1.834038 0.927622 -1.163e-01  
## 10 -6.868e-01 -0.2641596 0.480847 1.068436 0.791298 -6.817e-01  
## 11 -1.107e+00 -0.0667286 0.970212 1.337147 0.537544 -8.660e-02  
## 12 -7.942e-01 -0.1333655 1.115287 1.697010 0.930370 1.081e-01  
## 13 -1.035e+00 0.0173999 1.770392 1.535404 -0.435031 4.068e-01  
## 14 -6.795e-01 -0.7705514 0.465782 1.215606 1.131172 -8.048e-01  
## 15 -7.770e-02 0.0933942 0.320740 1.995806 1.092219 -4.876e-01  
## 16 -8.801e-01 -0.1821539 1.144301 1.473900 0.934887 -1.205e-01  
## 17 -1.976e+00 -0.3968327 1.521365 0.414103 -0.077126 5.521e-01  
## 18 -5.487e-01 0.0410599 1.303361 0.248553 1.114907 3.419e-01  
## 19 -1.942e-01 0.2202940 0.274901 1.593968 0.528188 -1.887e-01  
## 20 -1.442e+00 -0.6190711 1.367464 0.476094 0.580175 -4.378e-02  
## 21 -5.761e-01 -0.3112081 0.518691 1.332434 0.715203 -2.292e-01  
## 22 -1.066e+00 -0.2856827 0.995570 0.956046 0.375076 -1.573e-01  
## 23 -1.532e+00 -0.9866162 0.784510 -0.071101 0.548463 3.357e-01  
## 24 -6.439e-01 -0.8869972 0.329716 1.556244 1.766806 -8.075e-01  
## 25 -1.004e+00 -1.1421474 0.490099 0.881176 1.486004 -8.297e-01  
## 26 -5.679e-01 -0.2447810 0.501329 2.091827 1.559532 -1.857e-01  
## 27 -1.213e+00 -1.1298130 0.510311 0.724778 1.270069 -8.005e-01  
## 28 -8.977e-01 -0.5783574 0.651524 1.252532 0.435142 -2.519e-01  
## 29 -1.103e+00 -0.2976166 0.981921 1.109309 0.499218 -7.524e-02  
## 30 -7.281e-01 -0.5516617 0.565088 1.604600 1.518249 2.176e-01  
## 31 -4.737e-01 -0.8377556 0.012748 0.881491 0.980632 -3.354e-01  
## 32 -1.060e+00 -0.7868889 0.869785 1.111814 1.124286 -6.783e-01  
## 33 -1.182e+00 -0.8187267 0.602765 1.231577 1.571616 -5.419e-01  
## 34 -8.791e-01 -0.1933299 0.841236 1.617361 1.003608 7.020e-02  
## 35 -1.048e+00 -0.4156677 0.631105 1.354058 0.956873 -1.739e-02  
## 36 -1.414e+00 -0.9187578 0.645853 0.711558 1.153201 -7.472e-02  
## 37 -1.547e+00 -0.6720234 1.715481 0.832353 0.390670 9.290e-01  
## 38 -6.259e-01 -0.5789212 -0.410096 0.927658 0.602853 -6.318e-01  
## 39 -7.545e-01 -0.9540933 0.221263 0.742093 0.508428 -3.868e-01  
## 40 -8.987e-01 -1.2653765 0.075127 0.457761 1.201224 -4.261e-01  
## 41 4.113e-02 -0.1998488 0.162018 2.626327 1.655567 -5.705e-01  
## 42 -1.880e+00 -1.2208557 0.936273 0.360184 1.144384 -5.514e-01  
## 43 -1.567e+00 -1.2241480 0.991999 0.120776 1.035517 -6.364e-01  
## 44 -1.382e+00 -0.7859172 0.861074 0.626949 1.026336 -1.213e+00  
## 45 -1.773e+00 -1.0064814 1.344925 0.321911 0.739350 3.976e-01  
## 46 -2.612e+00 -1.3667291 1.054869 -0.775966 0.939884 -1.866e-01  
## 47 -2.583e+00 -1.2512155 0.901635 -0.486383 1.006095 -2.973e-01  
## 48 -2.428e+00 -1.1545302 1.261804 -0.014034 0.904101 -8.164e-01  
## 49 -4.139e-01 0.2190636 0.839013 1.195329 1.882083 -2.276e-01  
## 50 -1.693e+00 -0.5498671 1.220172 0.889391 0.736498 -7.543e-01  
## 51 -2.624e+00 -0.7098136 1.267973 -0.073786 0.425761 8.909e-01  
## 52 -2.844e+00 -1.0838115 1.386782 -0.528164 0.601162 2.589e-01  
## 53 -2.763e+00 -0.9007346 1.821953 -0.147090 0.685156 -9.089e-02  
## 54 -1.789e+00 -0.8497046 0.319688 0.192879 1.417856 -3.409e-01  
## 55 -2.443e+00 -0.6493612 1.421836 0.297061 0.714489 -5.681e-01  
## 56 -2.267e+00 -0.8133717 1.207087 0.334493 1.060374 1.133e-01  
## 57 -1.545e+00 -1.4993035 0.605000 1.210186 2.694341 -1.181e+00  
## 58 -2.531e+00 -0.8406607 1.259537 1.115445 2.002324 1.074e-01  
## 59 -2.554e+00 -0.4469828 1.392602 0.260386 0.533017 -1.114e-03  
## 60 -1.774e+00 0.1247503 1.533829 1.692886 0.806431 1.997e-01  
## 61 -2.101e+00 -0.4450431 1.016063 0.246379 0.492843 -3.431e-01  
## 62 -2.146e+00 -0.2448476 1.045507 0.481562 0.755904 8.092e-01  
## 63 -2.106e+00 -0.2851476 1.215492 0.674220 0.515259 7.525e-01  
## 64 -3.288e+00 -0.9899235 1.572337 -1.097502 -0.111522 -5.637e-01  
## 65 -3.046e+00 -0.6994416 1.157023 -0.682523 0.544799 -1.608e-01  
## 66 -1.763e+00 -0.0877931 0.933200 0.886836 0.357437 -8.511e-02  
## 67 -2.770e+00 -0.6595198 1.016327 -0.384191 0.308210 2.947e-01  
## 68 -1.866e+00 -0.5750395 0.835663 0.803355 1.255999 -1.944e-01  
## 69 -3.036e+00 -0.0163951 1.584502 0.307689 0.048450 1.524e-01  
## 70 -1.490e+00 0.3870704 0.579642 0.487433 0.276267 -1.471e-02  
## 71 -2.112e+00 0.3726565 1.114003 0.183902 -0.618406 1.783e-01  
## 72 -2.087e+00 0.1374661 1.081332 0.641627 0.550670 3.043e-01  
## 73 -1.900e+00 0.7384134 1.401394 0.606755 -0.531625 3.793e-01  
## 74 -1.942e+00 0.0752976 1.179562 0.177628 -0.110842 -1.021e+00  
## 75 -1.712e+00 0.6395207 0.667190 -0.115590 0.068992 6.211e-01  
## 76 -2.162e+00 0.2416854 1.207820 -0.825621 -0.847894 -1.059e+00  
## 77 -1.021e+00 0.9186681 0.648968 0.783817 -0.001525 5.555e-02  
## 78 -1.738e+00 0.4203530 0.455349 -0.268267 -0.221887 6.868e-01  
## 79 -1.533e+00 0.7799182 0.775414 0.362775 -0.850972 1.042e-01  
## 80 -2.156e+00 0.8159036 1.265244 0.083864 -0.941153 9.945e-01  
## 81 -1.921e+00 -0.0324538 0.766386 -0.952675 -0.771263 -5.798e-01  
## 82 -2.310e+00 0.2813546 1.059217 -0.417390 -0.395744 1.713e-01  
## 83 -2.047e+00 0.2629788 0.847744 -0.319996 0.043843 8.212e-01  
## 84 -1.616e+00 0.5527099 0.904387 0.032861 -0.665981 2.066e-01  
## 85 -3.374e+00 -0.0742132 1.833382 -1.326175 -0.821012 4.872e-01  
## 86 -1.864e+00 0.6673891 1.032758 -0.802867 -0.878253 1.146e-01  
## 87 -1.530e+00 0.5144758 0.814606 -0.027260 -0.098729 5.735e-02  
## 88 -1.269e+00 0.2947585 -0.191296 -0.137336 0.079885 -4.232e-01  
## 89 -8.020e-01 0.7231164 0.285874 0.432254 -0.467433 -6.778e-01  
## 90 -1.169e+00 0.8060298 0.264607 0.763602 0.023864 3.933e-01  
## 91 -3.203e+00 -0.0632455 1.846953 -0.990875 -0.879502 3.170e-01  
## 92 -3.733e+00 -0.0648359 1.840561 -1.862051 -0.934840 1.277e+00  
## 93 -1.203e+00 0.7616692 0.442816 -0.280587 -0.223486 4.863e-02  
## 94 -1.525e+00 0.4917220 0.492481 0.019781 0.011590 3.112e-01  
## 95 -1.722e+00 0.6597488 0.921531 0.176314 -0.871847 -6.969e-02  
## 96 -1.792e+00 0.2872450 0.288669 -0.572634 -0.219811 2.237e-01  
## 97 -3.247e+00 -0.2767838 1.407102 -1.806561 -0.997667 6.550e-02  
## 98 -2.216e+00 0.5099539 1.585916 -0.139638 -0.947116 1.972e-02  
## 99 -2.283e+00 0.3866953 1.317051 -0.263340 -0.873574 -5.886e-01  
## 100 -2.083e+00 -0.0152220 0.763201 -1.225221 -0.578321 -2.621e-01  
## 101 -3.459e+00 0.4879080 2.148008 -1.749366 -2.115296 4.861e-01  
## 102 -2.821e+00 0.8492176 1.680809 -1.373916 -1.923682 6.013e-01  
## 103 -2.248e+00 0.5141597 0.962251 -0.834859 -0.969292 -4.144e-01  
## 104 -2.560e+00 -0.4767831 0.886261 -0.607909 0.479106 -1.452e+00  
## 105 -2.941e+00 -0.2589783 1.091514 -0.730226 -0.132635 -1.049e+00  
## 106 -5.361e+00 -0.5667310 2.579193 -3.386656 -1.980525 1.777e-02  
## 107 -4.088e+00 -0.5333208 1.737785 -1.983937 -0.884311 -4.569e-01  
## 108 -4.107e+00 -0.6199750 1.440230 -1.895994 -0.405164 -1.741e-01  
## 109 -3.127e+00 -0.4893485 0.900525 -1.217408 -0.136242 -5.106e-01  
## 110 -4.093e+00 -0.5409386 1.538002 -2.011079 -0.393296 -3.336e-01  
## 111 -2.913e+00 0.3319639 1.422680 -0.980339 -1.467116 -1.310e+00  
## 112 -3.181e+00 -0.8411410 0.814679 -1.705818 -0.314155 -1.686e+00  
## 113 -3.637e+00 -0.7275973 1.691477 -2.336105 -1.279904 -3.581e+00  
## 114 -2.909e+00 -0.3640256 0.749140 -0.665620 0.382975 -1.632e+00  
## 115 -7.271e-02 -0.5031599 -0.405852 1.134286 1.785124 -5.677e-01  
## 116 4.874e-01 0.2499269 -0.099678 1.323945 0.442589 -6.572e-01  
## 117 6.402e-01 0.5486040 -0.553021 0.917941 0.179118 -9.370e-02  
## 118 -1.153e+00 -0.8089109 0.817209 0.466693 0.424012 1.808e-01  
## 119 2.405e-01 -1.7720310 0.957571 1.545004 1.761578 -5.037e-01  
## 120 4.492e-02 -2.0022114 1.027192 1.415913 1.830798 -6.064e-01  
## 121 -2.113e-02 -2.0272969 1.129641 0.248568 -0.021083 -1.505e+00  
## 122 1.209e-01 -2.1543734 0.379829 0.451751 1.103009 -1.429e-01  
## 123 -1.812e-02 -1.9172883 0.460174 0.386752 0.921720 -2.677e-01  
## 124 1.731e-02 -1.8354910 0.669692 0.520194 0.610239 -1.428e-02  
## 125 1.576e-01 -2.0337993 0.970516 0.404016 0.715013 -1.432e+00  
## 126 -4.193e-02 -2.0390124 0.411911 0.233768 0.822600 -1.339e-01  
## 127 1.654e-01 -1.9864546 1.036938 0.472601 0.666142 -1.385e+00  
## 128 -7.410e-01 -2.3384814 1.205238 0.266596 0.559331 -5.293e-01  
## 129 4.726e-03 -2.0910814 0.482864 0.278396 0.451367 -1.021e+00  
## 131 -2.445e-01 -2.0663430 0.322810 0.703018 1.229204 -1.227e+00  
## 132 4.379e-02 -2.0527655 0.799238 -0.037033 -0.012126 -1.382e+00  
## 133 -5.076e-02 -1.9193439 0.335949 0.428745 0.951658 2.299e-01  
## 134 -5.587e-01 -2.5425624 1.059972 1.151568 1.947047 -6.386e-01  
## 135 -1.099e+00 -2.4761815 1.195420 0.051800 1.057646 -1.769e-01  
## 136 1.317e-01 -1.8917975 0.362960 0.660267 0.804706 -8.939e-01  
## 137 -4.150e-02 -1.9096397 0.419424 0.163290 0.437617 -3.967e-01  
## 138 -9.071e-02 -2.4088252 0.515009 -0.076124 0.607010 -1.563e+00  
## 139 -2.305e-01 -2.2243273 0.645850 -0.625746 -0.786404 -1.446e+00  
## 140 8.847e-02 -2.4802269 0.693842 -1.069231 -1.548462 -8.001e-01  
## 141 4.050e-02 -2.0173122 0.824149 -0.349458 -0.541738 -2.219e+00  
## 142 -4.158e-01 -2.7671191 1.039484 -1.061155 -0.190041 -2.721e+00  
## 143 -1.092e-01 -2.0863979 0.803035 -0.248575 -0.314857 -1.009e+00  
## 144 2.308e-01 -1.9950265 0.612167 0.023561 -0.201982 -2.261e+00  
## 145 -1.611e-01 -2.1641702 0.542447 -1.233793 -1.428905 -3.136e+00  
## 146 -3.077e-01 -2.5293305 1.083535 -1.097929 -0.887204 -2.714e+00  
## 147 -7.552e-01 -1.8042581 1.140981 -0.405376 -0.235457 3.293e-01  
## 148 -6.044e-01 -1.5447656 1.066685 0.207382 -0.026951 3.591e-02  
## 149 -1.022e+00 -1.6608482 1.783667 -0.798175 -1.129801 -1.425e-01  
## 150 -5.718e-01 -1.8085639 1.459041 -0.362658 -0.580179 3.282e-01  
## 151 -8.864e-01 -2.5879768 1.645510 -2.411684 -3.315551 -2.983e+00  
## 152 -9.234e-01 -2.7276629 1.526264 -2.592024 -3.229229 -3.208e+00  
## 153 -6.030e-01 -2.9584365 1.958168 -3.290874 -4.199566 -5.711e+00  
## 154 -5.702e-01 -2.9022456 1.705751 -2.404447 -2.622450 -4.191e+00  
## 155 -6.083e-01 -1.8338450 1.111554 0.699108 0.862698 7.458e-01  
## 156 -8.631e-01 -1.8429375 1.203616 -0.159430 -0.334773 1.132e+00  
## 157 -4.476e-01 -1.5783245 1.710631 0.224542 -0.296171 1.147e+00  
## 158 -1.225e+00 -1.9137862 1.247662 -0.078296 0.493270 1.060e+00  
## 159 -2.676e-01 -1.3695354 -0.236776 0.024229 -0.811391 -1.886e+00  
## 160 -1.030e-01 -1.3140075 -0.164092 0.240328 -0.517095 -1.715e+00  
## 161 3.823e-02 -1.3589857 -0.141649 -0.001639 -1.114607 -2.079e+00  
## 162 -6.173e-02 -1.0280822 0.976143 0.923783 -0.847615 6.038e-01  
## 163 -1.897e-01 -1.7723651 0.849889 0.491043 0.178325 -1.730e+00  
## 164 3.604e-01 -1.5057200 -0.122592 -0.483342 -1.655162 -3.934e+00  
## 165 2.671e-02 -1.8249331 -0.112428 -0.204669 -0.543642 -1.952e+00  
## 166 3.234e-02 -1.6825300 0.553886 0.113515 -0.138029 -1.764e+00  
## 167 -1.498e-02 -1.5588619 0.346161 -0.463088 -1.318828 -3.010e+00  
## 168 -3.814e-01 -1.8236066 0.556710 0.318658 0.641152 7.312e-01  
## 169 -1.133e+00 -2.4046138 0.696280 -1.147337 0.028037 1.587e+00  
## 170 -1.733e+00 -2.0088826 1.391417 -2.213009 -1.414435 -4.060e+00  
## 171 -2.022e+00 -2.4293460 2.053958 -2.654898 -1.951782 -5.138e+00  
## 172 -1.672e+00 -1.5688288 0.555381 -0.694316 0.506216 -8.151e-01  
## 173 -1.653e+00 -2.1997319 1.644960 -0.806907 0.230035 -3.876e+00  
## 174 -2.763e+00 -1.5538173 1.608720 -1.817360 -0.207218 -1.684e+00  
## 175 -1.167e+00 -1.5975341 0.440288 1.219214 2.318443 -1.807e+00  
## 176 -8.365e-01 -1.2849327 0.462943 1.390134 1.997243 -1.269e+00  
## 177 -4.068e+00 -1.3253807 1.720330 -2.359754 -0.740979 1.760e+00  
## 178 1.848e-01 0.0456912 -1.356127 0.185353 -0.111749 1.823e-02  
## 179 -8.635e-01 -1.3462263 -0.174182 -0.653733 -0.190846 1.488e+00  
## 180 -1.075e+00 -0.7468882 -0.402204 -0.696234 -0.428320 1.490e+00  
## 181 -4.498e-01 -0.6446484 -0.682027 0.604950 0.675773 6.411e-01  
## 182 -3.425e-01 -1.1125920 -0.763155 0.200004 1.215596 2.454e+00  
## 183 -1.051e-01 -1.2381828 -0.925132 0.613505 1.185505 1.400e+00  
## 184 -3.355e-01 -1.1718935 -0.801109 0.649615 1.325042 3.572e-01  
## 185 -6.257e-01 -0.8130698 -0.484447 0.817861 1.036006 1.711e-01  
## 186 -2.103e-01 -0.9999469 -0.842860 0.743396 1.408244 3.962e-01  
## 187 -2.491e-01 -0.7155109 -1.095896 0.153087 0.896881 1.936e-02  
## 188 -2.783e-01 -0.4819695 -0.827707 0.887555 1.305782 5.861e-02  
## 189 -2.165e-01 -1.5498886 -0.461549 0.195104 1.080667 5.971e-01  
## 190 -2.117e-01 -0.9336262 -0.793484 0.029155 0.527898 -1.453e+00  
## 191 -6.993e-01 -1.0509927 -0.527712 0.070600 0.610244 6.714e-01  
## 192 -9.723e-01 -0.8594713 -0.339501 0.119747 0.972649 2.054e-01  
## 193 -3.399e-01 -0.8397789 -0.952508 0.972273 1.507163 -2.286e-01  
## 194 -4.728e-01 -0.9249251 -0.755322 0.519783 1.220214 5.735e-02  
## 195 -3.269e-01 -0.6857475 -0.570544 0.098231 0.053926 -7.644e-01  
## 196 -9.012e-02 -0.6935491 -1.124066 0.547633 0.761380 -8.571e-02  
## 197 -1.331e+00 -0.9521644 -0.135184 -0.252786 0.738451 2.074e-02  
## 198 -4.934e-01 -0.6116032 -0.739045 0.474146 0.779768 1.927e-01  
## 199 -3.978e-01 -1.0174957 -0.793839 0.436227 1.220675 3.579e-01  
## 200 -4.914e-01 -0.7925427 -0.702715 0.090562 0.859457 9.384e-02  
## 201 -6.470e-01 -1.0431670 -0.453969 0.091143 0.653138 -8.211e-01  
## 202 -9.681e-01 -0.9320295 -0.489361 0.357591 1.288090 -7.651e-02  
## 203 -8.376e-01 -0.9708487 -0.461526 0.465332 1.334370 -2.846e-01  
## 204 -5.597e-01 -0.6769472 -0.800136 0.244960 0.649609 5.503e-01  
## 205 -5.301e-01 -0.9765367 -0.713295 0.743297 1.880276 7.576e-02  
## 206 -3.533e-01 -0.4002242 -0.767841 0.610108 0.237674 -1.100e-01  
## 207 -4.073e-01 -0.8384902 -0.917284 0.507724 0.628375 -1.831e-01  
## 208 -3.790e-01 -1.1515974 -0.834704 0.279343 0.959840 1.437e+00  
## 209 -4.774e-01 -0.8238578 -0.445136 0.443029 0.440851 -5.466e-01  
## 210 -2.516e-01 -0.9523161 -0.847507 0.504697 0.995546 2.755e-01  
## 211 -4.235e-01 -1.0239539 -0.821358 0.692747 1.247876 -1.082e-01  
## 212 -2.113e-01 -1.1667985 -1.038669 0.865461 1.565849 -4.951e-01  
## 213 -9.092e-01 -1.0627894 -0.470044 0.094439 1.084299 4.534e-01  
## 214 -2.844e-01 -0.9470779 -0.942654 0.559408 1.201086 5.170e-01  
## 215 -8.052e-01 -1.0777035 -0.442728 0.369617 1.030007 5.272e-01  
## 216 -6.151e-01 -0.9304413 -0.837923 0.500268 1.110392 2.016e-01  
## 217 -7.784e-01 -1.2608477 -0.480370 0.275572 0.666231 8.411e-01  
## 218 -5.914e-01 -1.0557946 -0.685298 0.550851 1.184560 3.825e-03  
## 219 -9.351e-01 -0.9260451 -0.331308 0.520814 0.999913 6.291e-01  
## 220 -1.857e+00 0.4604699 0.189223 -0.849158 -1.198327 1.034e+00  
## 221 -1.671e+00 0.4382918 0.034258 -0.965153 -0.859173 4.514e-01  
## 222 -1.259e+00 0.5244842 -0.156560 -0.240203 -0.434487 2.472e-01  
## 223 -1.356e+00 0.5977640 0.026550 -0.378411 -0.701508 5.508e-01  
## 224 -1.767e+00 0.2796952 0.345390 -1.099445 -0.857276 2.061e-01  
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## 226 -7.190e-01 0.4622102 -0.056958 0.935770 0.401737 9.305e-01  
## 227 -1.806e+00 0.1411974 0.728860 -0.784414 -0.889189 6.100e-01  
## 228 -1.955e+00 0.3102350 0.921710 -0.405507 -0.454984 1.206e+00  
## 229 -2.147e+00 0.1270608 0.778912 -0.785902 -0.725649 1.791e+00  
## 230 -1.887e+00 0.4489950 0.592561 -0.782830 -0.665528 1.676e+00  
## 231 -1.326e+00 0.5158798 0.296290 -0.510298 -0.710170 1.076e+00  
## 232 -1.514e+00 0.2835554 0.076077 -0.975509 -0.696726 1.301e+00  
## 233 -1.378e+00 0.3274816 0.031794 -0.404228 -0.523282 2.538e-01  
## 234 -1.944e+00 0.2582432 0.594616 -0.739451 -0.764789 7.954e-01  
## 235 -1.940e+00 0.2016119 0.613036 -0.791194 -0.518692 1.667e+00  
## 236 -2.335e+00 -0.2645456 0.671316 -1.138711 -0.857253 1.255e+00  
## 237 -2.603e+00 -0.0845750 0.842842 -1.596249 -1.418036 1.384e+00  
## 238 -2.312e+00 -0.1191677 0.580313 -1.039091 -0.352683 1.522e+00  
## 239 -3.020e+00 -0.1919148 1.086074 -1.710839 -1.001319 1.487e+00  
## 240 -2.913e+00 -0.1091436 1.009634 -1.647644 -1.231193 1.910e+00  
## 241 -2.920e+00 -0.1219979 1.069745 -1.365640 -0.672502 1.883e+00  
## 242 -2.959e+00 -0.1201995 0.856373 -1.613555 -0.902503 2.009e+00  
## 243 -2.358e+00 0.0850571 0.707882 -0.831676 -0.242864 1.182e+00  
## 244 -2.456e+00 -0.1267013 0.856028 -1.322311 -0.733374 5.825e-01  
## 245 -2.950e+00 -0.1057807 1.055833 -1.330571 -0.610110 1.634e+00  
## 246 -3.127e+00 -0.3082127 0.896306 -1.926711 -0.770170 1.954e+00  
## 247 -2.150e+00 -0.2147257 0.268571 -1.075012 -0.224368 9.738e-01  
## 248 -2.214e+00 -0.1474190 0.374920 -0.801143 -0.066657 1.005e+00  
## 249 -2.259e+00 -0.1636290 0.367245 -1.028074 -0.399834 1.258e+00  
## 250 -1.209e+00 0.0621000 -0.096845 0.135948 0.262083 6.613e-01  
## 251 -2.702e+00 -0.2486219 0.684388 -1.581940 -0.581575 1.082e+00  
## 252 -1.897e+00 -0.2182528 0.205425 -1.010258 -0.428226 1.224e+00  
## 253 -2.761e+00 -0.4022346 0.800015 -1.542572 -0.503266 4.558e-03  
## 254 -2.886e+00 -0.3250551 0.799616 -1.683553 -0.592138 7.788e-01  
## 255 -3.130e+00 -0.2446601 0.882195 -1.799093 -0.848887 1.017e+00  
## 256 -2.642e+00 -0.2283405 0.767462 -1.122280 -0.310795 4.193e-01  
## 257 -2.674e+00 -0.1459251 0.801050 -1.315830 -0.603194 5.596e-01  
## 258 2.085e+00 0.9100053 0.420706 -2.012742 0.687497 3.256e-01  
## 259 1.755e+00 0.7353424 2.471501 -0.349883 1.364187 -1.567e-01  
## 260 1.802e+00 0.8403238 1.883822 -0.320175 0.895891 1.013e+00  
## 261 1.589e+00 0.4583305 0.343664 -0.084804 -0.006275 7.833e-01  
## 262 1.903e+00 1.4365233 1.426183 -1.963903 1.759034 1.127e+00  
## 263 1.861e+00 1.3886343 0.948429 -1.907472 2.043389 -2.012e-01  
## 264 2.100e+00 1.5510251 0.322844 -2.125740 1.766988 -5.626e-02  
## 265 2.123e+00 1.4263750 0.493212 -1.609239 2.404476 -5.702e-01  
## 266 2.315e+00 1.3032311 0.794292 -1.340402 2.307014 -1.779e-01  
## 267 1.912e+00 1.4377616 0.698645 -1.366564 1.099649 9.978e-02  
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## 269 1.950e+00 0.8802897 0.454892 -1.976543 2.050817 -1.384e+00  
## 270 2.318e+00 1.9682034 0.811941 -2.605405 2.539932 -2.935e-02  
## 271 2.433e+00 1.7036792 0.581286 -3.289120 3.713813 -5.040e-01  
## 272 2.337e+00 1.7667010 0.485588 -3.030269 2.519734 5.880e-02  
## 273 2.256e+00 1.7624232 0.629957 -2.720296 3.142169 -5.111e-01  
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## 275 1.586e+00 1.1101152 0.068437 -0.777753 1.020071 8.917e-02  
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## 280 2.168e+00 1.3044591 0.609746 -3.370498 2.943353 8.590e-02  
## 281 2.171e+00 1.4834279 -0.014416 -2.471081 1.125807 3.013e-01  
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## 283 2.534e+00 2.0203009 -0.046692 -2.755504 1.148519 1.022e-01  
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## 307 1.635e+00 1.6042665 -0.139426 -0.925709 1.475615 -1.619e-01  
## 308 1.778e+00 1.4137769 -0.041705 -0.742794 1.806666 -3.871e-01  
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## 320 1.180e+00 0.8918364 -0.483357 0.387036 0.335025 -4.410e-03  
## 321 1.757e+00 1.6869968 0.317341 0.263052 0.451153 -6.635e-01  
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## 365 1.507e+00 1.3268469 0.082101 0.676487 -0.267569 -9.701e-01  
## 366 1.606e+00 1.2453669 0.136624 0.772686 -0.476488 -1.308e+00  
## 367 1.339e+00 1.2127793 0.325552 0.481283 -0.021686 -7.445e-01  
## 368 1.665e+00 1.3154940 -0.170635 -0.791508 -0.400520 -1.722e+00  
## 369 1.712e+00 1.3185246 0.421445 0.275726 0.379880 -1.368e+00  
## 370 1.646e+00 1.3591509 -0.200875 0.317884 -0.615600 -1.289e+00  
## 371 1.289e+00 0.9183134 -0.109577 0.757414 -0.272765 -5.247e-01  
## 372 1.477e+00 1.2342522 -0.262232 0.330521 -0.387573 -9.323e-01  
## 373 1.607e+00 1.3762532 0.215765 0.913594 -0.765104 -2.457e-01  
## 374 1.538e+00 1.3013522 0.063392 0.903671 -1.096260 -9.218e-01  
## 375 1.523e+00 1.2371376 0.051704 0.580357 -0.444423 -9.491e-01  
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## 377 1.545e+00 1.4463924 0.247741 0.352662 -0.148390 -1.102e+00  
## 378 1.444e+00 1.2061638 -0.254510 0.704034 -0.770916 -4.728e-01  
## 379 9.237e-01 0.6576774 0.107498 1.186452 -0.279360 3.136e-01  
## 380 1.037e+00 0.8079598 0.181590 1.136872 -0.312316 3.377e-01  
## 381 8.102e-01 0.4176001 -0.553105 0.736164 -0.620530 6.424e-01  
## 382 8.547e-01 0.5378428 -0.268708 0.731074 -0.330527 4.372e-01  
## 383 7.734e-01 0.4191948 -0.312917 0.759753 -0.448627 7.572e-01  
## 384 1.439e+00 0.8750002 -0.135457 0.851292 -1.120504 -5.110e-01  
## 385 1.282e+00 0.7331899 -0.321588 0.632031 -0.363845 -5.420e-01  
## 386 1.202e+00 1.0364998 0.015549 0.861710 -1.662882 -7.101e-01  
## 387 1.312e+00 0.9172184 0.198730 1.140769 -0.419672 -5.401e-01  
## 388 1.419e+00 0.9406261 0.262380 1.331368 -1.220822 -7.587e-01  
## 389 1.302e+00 1.3940648 0.178400 0.333229 -0.091194 -7.059e-01  
## 390 1.404e+00 1.1961564 0.294712 1.056649 -0.153830 -5.363e-01  
## 391 1.561e+00 1.0556724 -0.461636 0.241571 -0.511981 -1.144e+00  
## 392 1.879e+00 1.5940672 0.179434 0.643803 -0.413945 -7.481e-01  
## 393 8.812e-01 0.6309439 -0.535591 -0.031201 -1.070103 -8.168e-01  
## 394 1.532e+00 1.0463671 -0.145047 0.412562 -0.047018 -6.558e-01  
## 395 1.302e+00 0.1980603 1.967023 1.678556 -2.408448 4.667e-01  
## 396 1.504e+00 0.5229952 2.236615 2.183381 -2.001281 1.368e+00  
## 397 1.199e+00 0.3657151 1.849696 2.204203 -2.024060 1.418e+00  
## 398 1.347e+00 0.7644118 2.151672 2.205047 -1.725719 1.049e+00  
## 399 1.492e+00 1.2551703 2.327877 2.147327 -1.755923 1.370e+00  
## 400 2.039e+00 1.8084096 2.649557 1.083010 -0.192872 8.502e-01  
## 401 2.094e+00 1.5972186 2.929820 1.159021 -0.357162 7.282e-01  
## 402 1.712e+00 1.4364102 2.743001 1.160483 -0.448673 1.240e+00  
## 403 1.936e+00 1.2634515 2.526905 1.065916 -1.222824 -2.125e-01  
## 404 1.511e+00 1.5124437 3.373400 2.396959 -0.940384 9.386e-01  
## 405 1.998e+00 2.0588531 3.074160 1.790688 -0.209468 8.021e-01  
## 406 1.898e+00 1.7499297 3.034607 1.854420 -0.951506 1.149e+00  
## 407 1.511e+00 1.2828670 2.853904 1.733523 -0.734742 9.516e-01  
## 408 1.171e+00 1.1931815 2.636546 2.686915 -1.963550 1.218e+00  
## 409 1.570e+00 1.1121224 2.352702 0.542035 -0.660896 -4.047e-02  
## 410 1.199e+00 0.0211486 1.734094 1.257106 -2.718452 6.211e-01  
## 411 1.342e+00 0.6462069 2.460668 1.849238 -2.267463 3.781e-01  
## 412 9.349e-01 0.5400149 1.298069 1.370910 -2.092744 8.992e-01  
## 413 1.166e+00 1.5166963 1.719391 2.303950 -1.602680 6.900e-01  
## 414 1.389e+00 1.9985885 2.200351 2.565558 -1.807262 9.469e-03  
## 415 1.445e+00 1.3905588 1.980084 0.524626 -0.495252 9.394e-01  
## 416 7.737e-01 0.7911062 1.171518 1.152289 -1.623915 1.442e+00  
## 417 9.657e-01 1.2266679 1.737471 2.884130 -1.635612 1.161e+00  
## 418 8.503e-01 0.5328363 0.728109 0.279599 -2.428684 9.467e-01  
## 419 3.570e-01 0.3037332 0.721782 0.524369 -1.316716 4.832e-01  
## 420 1.115e+00 1.1323404 -0.100864 1.392174 -1.734915 7.091e-01  
## 421 1.395e+00 1.4529991 0.538870 0.691901 -1.502183 -4.198e-01  
## 422 1.037e+00 0.9071891 1.052888 0.054212 0.191053 6.201e-01  
## 423 1.364e+00 1.4375145 0.922327 1.321429 -1.390696 1.193e-02  
## 424 7.817e-01 0.9568587 0.042462 1.452543 -0.631441 1.359e+00  
## 425 1.116e+00 1.3451486 1.161149 1.021165 -0.712021 1.000e+00  
## 426 5.699e-01 -0.7382869 -0.737036 -0.353637 -0.647462 1.357e+00  
## 427 8.560e-01 -0.0342619 -0.909418 -1.026259 -0.953051 7.328e-01  
## 428 1.037e+00 0.7638567 0.443515 1.315222 0.698895 -2.100e-01  
## 429 1.082e+00 0.0322619 -1.168999 -0.956648 -0.708037 4.099e-01  
## 430 1.876e+00 2.2452263 0.894899 -0.965712 1.313578 -2.586e-02  
## 431 1.206e+00 1.3142788 0.283222 0.923870 -1.572131 3.880e-01  
## 432 1.095e+00 1.4244146 0.319305 0.376310 -1.402042 2.129e-01  
## 433 1.476e+00 1.3295765 -0.248349 0.474880 -1.545945 -4.198e-01  
## 435 1.270e+00 1.3245710 0.522397 1.226236 -1.390072 -1.899e-01  
## 436 3.334e-01 -0.6468958 -0.957997 -0.625329 -0.639467 1.164e+00  
## 437 1.122e+00 0.3299498 -1.323372 -0.691530 -0.950264 1.455e-01  
## 438 9.760e-01 0.1920337 -1.311850 -0.918214 -0.886789 3.882e-01  
## 439 1.230e+00 -0.0964495 -1.476878 -0.837205 -1.214723 7.184e-01  
## 440 8.772e-01 1.1111166 0.313625 0.429163 -1.258137 8.846e-01  
## 441 1.322e+00 0.7575174 -1.326692 -0.918945 -0.562412 -1.281e-01  
## 442 8.299e-01 1.0429357 0.364629 0.646825 -1.400835 2.510e-01  
## 443 6.485e-01 0.0990358 -0.754690 -0.711949 -0.228650 2.971e-01  
## 444 6.467e-01 -0.3785619 -1.012755 -0.856630 -0.749066 7.383e-01  
## 445 1.017e+00 0.4876176 -0.926255 -0.671224 -0.447156 1.174e-01  
## 446 1.291e+00 0.8657757 -1.244608 -0.882493 -0.999909 3.155e-01  
## 447 1.658e+00 0.8442119 -1.774697 -1.192062 -0.948527 -1.144e-01  
## 448 5.994e-02 -0.5594910 -0.413510 -0.781637 -1.271815 -7.494e-01  
## 449 1.015e+00 -0.0822597 -1.144353 -0.420933 -0.444799 1.585e-01  
## 450 5.093e-01 -0.3595912 -0.565114 -0.646623 -0.558912 -6.070e-01  
## 451 3.422e-01 0.0327023 -0.465691 -0.454712 -0.757841 2.163e-01  
## 452 3.687e-01 0.0316788 -0.690835 -0.698752 -1.627838 -1.600e+00  
## 453 5.185e-01 -0.0291938 -0.802020 -0.279708 -0.673354 2.140e-02  
## 454 4.867e-01 -0.1594321 -1.056454 -0.492297 -0.246455 1.046e-01  
## 455 1.340e+00 1.6840350 0.519557 0.870231 -0.788627 -1.969e-01  
## 456 7.982e-01 0.1103444 -1.257475 -0.837231 -0.381843 3.559e-01  
## 457 1.201e+00 0.3305724 -1.303435 -1.015283 -0.375826 -5.501e-02  
## 458 4.696e-01 -0.2994957 -1.023130 -0.333206 -0.061305 2.975e-01  
## 459 8.192e-01 -0.0852260 -1.128444 -0.648177 -0.554088 5.976e-01  
## 460 1.245e+00 0.5737688 -1.392991 -0.993889 -0.910376 8.372e-01  
## 461 8.224e-01 0.0802170 -1.148804 -0.467210 -0.078366 5.761e-01  
## 462 5.704e-01 -0.1815817 -1.053649 -0.595085 -0.267194 4.990e-01  
## 463 1.004e+00 0.0795644 -1.323921 -0.858585 -0.844833 5.879e-01  
## 464 7.641e-01 -0.1189052 -0.913728 -0.517972 -0.303985 -1.997e-02  
## 465 1.568e+00 1.0998837 -1.369337 -1.459709 -0.192258 -1.698e-01  
## 466 1.245e+00 0.5941848 -1.652505 -0.814611 -0.443219 1.078e-01  
## 467 1.252e+00 1.6891538 0.635930 0.995623 -0.437649 -5.132e-03  
## 468 8.358e-01 -0.1128142 -1.168008 -0.687466 -0.329059 2.516e-01  
## 469 4.184e-01 -0.0347745 -0.549572 -0.682422 -0.297589 1.050e+00  
## 470 1.600e-01 -0.5369092 -0.545056 -1.162503 -1.020263 4.623e-01  
## 471 9.578e-01 -0.0189590 -1.077061 -0.787538 -1.080848 1.054e-02  
## 472 1.152e+00 1.5031786 -0.145089 0.378565 -1.574785 7.409e-03  
## 473 8.070e-01 -0.1139998 -1.165946 -0.775532 -0.610624 5.121e-01  
## 474 1.222e+00 1.6395452 0.163376 0.214222 -1.122211 -4.228e-01  
## 475 1.279e+00 0.1460781 -1.390895 -1.036260 -1.141603 -2.480e-01  
## 476 8.224e-01 0.1120704 -1.193687 -0.679475 -1.004287 4.639e-01  
## 477 7.278e-01 -0.0994574 -1.117925 -0.789055 -0.641226 5.743e-01  
## 478 1.346e+00 0.5969732 -1.222250 -1.438874 -0.379484 2.302e+00  
## 479 4.276e-01 -0.7761217 -0.693017 -0.826229 -0.866439 8.200e-01  
## 480 5.363e-01 -0.0826678 -0.494420 -0.714317 -0.757435 -7.715e-01  
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## 482 7.737e-01 1.3342384 -0.132800 0.972336 -1.589543 -1.162e-01  
## 483 1.777e-01 0.1087104 -0.415030 -0.441555 -0.940278 -8.235e-01  
## 484 1.473e+00 0.6116845 -1.156650 -1.200025 -0.690401 5.460e-02  
## 485 1.208e+00 0.4159202 -1.042120 -0.801466 -0.645404 8.242e-02  
## 486 9.523e-01 0.0003840 -1.080170 -0.886383 -0.320660 -1.478e-01  
## 487 1.008e+00 0.4091595 -0.902918 -1.027516 -0.288479 5.004e-01  
## 488 1.028e+00 1.0986635 -0.464320 0.037570 -0.710346 -9.111e-02  
## 489 1.484e+00 1.3047064 -0.604323 0.328075 -0.763834 -8.152e-01  
## 490 7.835e-01 0.0342722 -0.988181 -0.929242 -1.009133 1.781e-01  
## 491 1.258e+00 0.2066143 -1.194210 -0.863823 -0.839626 -3.079e-02  
## 492 8.874e-01 0.4845046 -1.055690 -0.793654 -0.334080 1.959e-01  
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## 506 7.646e-01 0.0912784 -1.249729 -0.615224 -1.026009 7.342e-02  
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## 510 7.259e-01 0.0999580 -1.350840 -0.343924 -0.512612 3.474e-01  
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## 514 1.492e+00 0.8750102 -0.924044 -0.459988 -1.087483 -2.555e+00  
## 515 1.369e+00 1.3448092 -1.117120 -0.473014 -0.922239 -4.618e-01  
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## 525 1.182e+00 0.5139335 -1.569472 -1.036161 -0.819392 -8.638e-02  
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## 527 7.072e-01 0.1304090 -1.214165 -0.487005 -1.422917 -5.025e-01  
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## 529 5.856e-01 -0.4595021 -1.088096 -0.182778 -0.186370 8.653e-01  
## 530 1.048e+00 1.3168874 -0.478538 -0.163202 -0.256517 -5.944e-02  
## 531 4.954e-01 -0.1123850 -1.137947 -0.760857 -0.918668 9.475e-02  
## 532 6.132e-01 0.0402623 -1.367237 -0.848101 -0.823705 2.193e+00  
## 533 1.452e-01 -0.8748489 -0.713953 0.598286 0.583899 9.698e-01  
## 534 4.033e-01 -0.1761415 -0.862824 -1.226497 -1.480894 -4.715e-01  
## 535 7.755e-01 -0.3756184 -1.501457 -0.010704 0.173383 8.214e-02  
## 536 4.892e-01 -0.1683239 -1.221395 -0.076691 0.098750 5.442e-01  
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## 538 3.853e-01 -0.4308313 -1.309861 -0.285794 -0.344360 3.943e-01  
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## 541 6.093e-01 0.0911493 -1.163731 -0.627626 0.121838 -1.889e-02  
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## 545 6.352e-01 -0.0176731 -1.432938 0.065023 0.071275 6.659e-02  
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## 547 8.873e-01 0.3932618 -1.491815 -0.529200 0.087616 -3.929e-01  
## 548 4.904e-01 0.1247803 -0.976042 0.389877 -0.873768 -2.633e-01  
## 549 6.159e-01 0.2483090 -1.458692 -0.685975 -1.324146 -5.340e-01  
## 550 7.163e-01 0.2821638 -1.246926 -0.863135 -0.728131 -6.927e-01  
## 551 7.039e-01 0.2583285 -1.318106 -0.249185 -0.154972 -2.640e-01  
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## 560 2.334e-01 0.3546372 -1.400747 0.070589 -0.593008 1.816e-01  
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## 562 7.968e-01 0.0616253 -1.368257 -0.452886 -0.351125 -5.331e-01  
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## 565 4.708e-01 -0.0149040 -1.579878 0.091787 -0.503974 -8.404e-01  
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## 572 2.821e-01 -0.2043597 -1.054421 -0.049269 -0.099894 -4.898e-01  
## 573 4.988e-01 -0.0444055 -1.452446 0.514901 -0.255288 -7.351e-01  
## 574 8.860e-01 0.2590161 -1.707046 -0.064803 -0.294485 -1.318e+00  
## 575 4.078e-01 0.0689075 -1.147198 0.052442 0.387581 -2.082e-01  
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## 581 2.857e-01 0.4195810 -1.535118 0.080400 -0.365992 -6.121e-01  
## 582 9.986e-01 0.4747055 -1.737972 0.399303 -1.447893 -2.747e+00  
## 583 1.027e+00 0.7977066 -1.532440 -0.201284 -0.961225 -1.123e+00  
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## 585 1.406e+00 1.1520565 -0.130463 0.685899 0.030859 2.672e-05  
## 586 1.527e+00 1.4112665 -0.852870 -0.063625 0.046346 -1.862e-01  
## 587 1.140e+00 0.8897629 -0.199103 0.837273 -0.090941 3.291e-02  
## 588 7.094e-01 0.2207458 -0.508437 0.523170 0.640792 -5.267e-03  
## 589 9.633e-01 0.7621439 -0.567214 -0.061941 0.118347 1.096e-01  
## 590 2.002e-01 -0.0028332 0.486979 -0.723338 -0.131267 4.822e-01  
## 591 8.768e-01 0.6380620 -0.368728 0.520520 -0.465717 3.906e-02  
## 592 1.618e+00 0.8623754 -0.048800 -0.584279 0.795704 7.827e-01  
## 593 9.035e-01 0.1986400 -0.629184 -0.141113 -0.495516 5.113e-01  
## 594 1.787e-01 0.2344056 -0.273517 -0.159909 0.136135 2.549e-01  
## 595 5.544e-01 0.6980097 0.165234 -0.017694 0.906031 2.290e-01  
## 596 4.226e-01 0.3861875 -0.018057 0.810877 0.342382 2.155e-01  
## 597 7.859e-01 0.0474714 0.063058 0.522610 -0.204038 4.710e-01  
## 598 7.988e-01 0.6113626 -0.148941 0.962619 0.318754 -9.894e-02  
## 599 1.934e-01 0.4847507 -0.040504 0.051610 0.104396 9.820e-01  
## 600 8.587e-01 0.6243405 -0.548846 0.546075 0.217659 -4.967e-02  
## 601 1.200e+00 0.7228499 -0.948170 0.290020 0.006546 -9.203e-01  
## 602 8.963e-01 0.2490413 0.247414 -0.367575 0.838644 3.257e-01  
## 603 8.906e-01 0.4544783 -0.448566 -0.345603 1.035678 -1.378e-01  
## 604 2.584e-01 0.1207519 -0.267173 0.546528 0.278910 4.413e-02  
## 605 4.522e-01 0.2340967 -0.166412 0.484702 0.367599 -1.082e-01  
## 606 3.402e-01 0.0978472 -0.228087 0.544072 0.425298 1.995e-01  
## 607 1.585e-01 0.0268331 0.023965 0.323541 0.370734 1.894e-01  
## 608 2.823e-01 0.2349590 0.074278 0.581790 0.446724 2.566e-01  
## 609 6.662e-01 0.3415627 -0.301527 1.065751 0.203110 -8.716e-03  
## 610 3.669e-01 -0.1742596 -0.045099 0.371416 0.374481 -1.638e-01  
## 611 6.844e-01 0.1137429 -0.404167 0.566756 -0.079798 7.246e-02  
## 612 5.811e-01 -0.2003560 0.212283 0.581770 1.143621 1.499e-01  
## 613 1.171e-01 -0.2674262 -0.474429 0.296356 0.160239 9.531e-01  
## 614 6.590e-02 -0.0984048 -0.032052 -0.698624 0.497891 3.291e-01  
## 615 7.889e-01 0.1025261 -0.560930 0.833288 0.133092 4.202e-01  
## 616 8.495e-01 0.3592518 -0.667461 0.595805 0.002525 2.478e-01  
## 617 2.427e-01 -0.2208633 0.127293 0.225889 0.600022 8.002e-01  
## 618 7.838e-01 0.4367563 0.364376 2.010330 -0.178190 -3.051e-01  
## 619 -1.927e-02 0.3001778 1.263893 0.750403 0.468613 5.229e-01  
## 620 1.043e+00 0.7568571 -0.624515 0.439874 -0.601853 -9.943e-01  
## 621 9.569e-01 0.3031098 0.199843 0.992115 -0.720360 -1.341e+00  
## 622 7.302e-01 0.4711950 0.617790 1.547580 -0.392584 -4.908e-01  
## 623 5.155e-01 -0.0177507 -0.070059 1.161889 0.056956 -5.427e-02  
## 624 5.376e-01 0.0716475 0.114004 1.111191 -0.032595 2.802e-02  
## 625 1.022e+00 0.6684430 0.159582 1.362423 -0.343073 -2.031e-01  
## 626 4.345e-01 0.2418814 0.379799 1.152880 -0.054016 -1.822e-01  
## 627 1.235e+00 0.8121910 -0.743379 0.344635 0.134879 -1.114e+00  
## 628 1.198e+00 0.8792058 -0.647642 0.438943 -0.040783 -4.632e-01  
## 629 7.855e-01 0.3274189 -0.426580 0.489069 0.157570 -2.678e-01  
## 630 1.004e+00 0.4334051 -0.803629 0.504820 0.210065 1.306e-01  
## 631 9.504e-01 0.4669625 -0.582344 0.803591 0.271491 -9.078e-02  
## 632 1.263e+00 0.3702746 -0.022362 0.667504 0.259962 -1.883e+00  
## 633 9.086e-01 0.2038414 -0.094710 1.511084 -0.056581 -7.469e-01  
## 634 6.543e-01 0.3823006 -0.370795 0.778543 0.131927 -3.493e-01  
## 635 6.602e-01 0.2423290 -0.553948 0.688047 0.332964 -6.503e-01  
## 636 1.184e+00 0.6900568 -0.784252 0.546863 -0.430960 -9.642e-01  
## 637 1.115e+00 0.7324465 -0.529209 0.085245 0.766299 -3.635e-01  
## 638 9.845e-01 0.5244580 -0.646613 0.472418 0.473992 -6.344e-01  
## 639 9.157e-01 0.4181698 -0.940535 0.411368 0.335103 -5.981e-02  
## 640 7.373e-01 0.2919089 -0.469061 0.992550 0.026502 -1.010e-02  
## 641 7.130e-01 0.2806022 -0.520824 0.800837 0.183475 1.897e-01  
## 642 7.026e-01 0.1429306 -0.632191 0.824915 0.292690 -7.859e-01  
## 643 9.862e-01 0.4933116 -0.622823 0.690199 0.307717 -7.717e-01  
## 644 8.265e-01 0.2153947 -0.610013 0.912182 0.056643 -9.079e-01  
## 645 7.656e-01 0.1746459 -0.154064 1.184447 0.211831 -6.491e-01  
## 646 7.637e-01 0.0244381 -0.291717 1.021108 0.008105 -1.147e+00  
## 647 5.370e-01 0.0445361 -0.409378 0.618824 -0.025126 -6.065e-01  
## 648 1.025e+00 0.5056947 -0.746115 0.654042 -0.149029 -9.992e-01  
## 649 6.454e-01 0.0280587 -0.359456 1.014674 0.502996 -7.630e-01  
## 650 7.122e-01 0.1897699 -0.169890 1.222778 -0.539408 -7.748e-01  
## 651 5.396e-01 -0.0676269 -0.710155 0.694847 0.231707 -7.825e-01  
## 652 7.894e-01 0.3743231 -0.658938 0.709388 0.290520 -2.401e-01  
## 653 6.195e-01 0.4214055 0.287689 1.588515 0.103180 1.789e-01  
## 654 7.296e-01 0.1519117 -0.547212 0.869237 0.073833 -8.581e-01  
## 655 7.220e-01 0.0946458 -0.528974 1.360669 0.735906 -5.264e-01  
## 656 5.128e-01 0.0359634 -0.356638 0.879467 0.488294 -5.091e-01  
## 657 2.404e-01 -0.3993830 -0.304262 0.861143 0.967531 -1.860e-01  
## 658 5.333e-01 0.0786630 -0.396228 1.001877 0.231428 -4.244e-01  
## 659 -4.750e-01 -0.0922559 0.301141 1.110551 0.136873 8.848e-02  
## 660 8.313e-02 -1.0125634 -0.722300 0.097534 0.121733 5.539e-01  
## 661 -6.874e-01 -1.5715052 0.078225 0.623941 1.136911 8.307e-01  
## 662 -8.945e-01 -1.6521086 0.210043 0.581517 1.482275 1.148e+00  
## 663 -4.294e-01 -1.4828153 -0.288978 0.347966 0.928595 1.216e+00  
## 664 1.836e-01 -1.2484824 -1.018087 0.824169 0.956986 7.364e-01  
## 665 -8.180e-01 -1.6618236 -0.011137 0.536157 1.190585 1.336e+00  
## 666 -7.934e-01 -1.2696673 0.174811 -0.652535 -0.759185 3.103e-01  
## 667 -5.702e-01 -1.5292952 -0.200987 0.199407 0.840889 9.703e-01  
## 668 -4.326e-01 -1.3577823 -0.200695 0.575273 0.998892 1.080e+00  
## 669 -4.082e-01 -1.2977279 -0.211013 0.691372 1.171405 9.581e-01  
## 670 1.775e-01 -1.1032289 -0.699800 -0.095179 -0.137757 1.005e+00  
## 671 1.024e-01 -0.4380326 -0.920514 -0.258590 -0.289746 2.288e-01  
## 672 8.798e-02 -0.8416263 -0.927034 0.038914 0.278097 6.798e-01  
## 673 -2.885e-02 -0.7480273 -0.801128 0.096327 0.082114 5.084e-01  
## 674 9.722e-02 -0.4088668 -1.138035 -0.415347 -0.472267 5.905e-01  
## 675 3.545e-02 -0.9617018 -0.673175 -0.546281 -1.019737 3.961e-01  
## 676 -3.900e-01 -1.3568595 -0.476806 0.510993 0.934660 1.290e+00  
## 677 6.420e-01 -0.1362638 -1.569069 0.132457 -0.556523 9.324e-02  
## 678 4.416e-01 0.2578181 -1.504693 0.487188 -0.749640 -1.011e+00  
## 679 1.830e-01 -0.7067692 -1.044332 0.299710 0.484083 5.520e-01  
## 680 -3.230e-01 -1.2990010 -0.576937 0.623749 1.108365 6.499e-01  
## 681 -2.715e-01 -1.1893387 -0.424295 0.935123 1.831869 1.710e-01  
## 682 5.981e-01 0.3838594 -1.908553 0.494948 -0.088641 -3.108e-01  
## 683 5.808e-01 0.3273342 -1.864232 0.319096 -0.168767 -2.207e-02  
## 684 -4.983e-02 -0.1513003 -0.970262 -0.008609 -1.020588 -2.096e+00  
## 685 3.738e-01 -0.1059986 -1.669689 0.530677 -0.292299 4.690e-01  
## 686 -2.204e-01 -0.4646061 -0.774281 0.632775 0.619917 -1.257e-01  
## 687 2.819e-02 -0.4536948 -1.201777 0.318483 0.512180 1.453e-01  
## 688 -9.175e-01 -1.5799870 -0.080504 0.088490 0.553957 1.162e+00  
## 689 7.501e-02 -1.4176812 -0.466238 -0.126403 -0.091718 -8.687e-01  
## 690 -3.843e-01 -0.8526590 -0.395948 -0.228568 0.405183 3.258e-01  
## 691 1.991e-01 0.0534929 -1.505202 0.386612 0.198322 4.845e-02  
## 692 -9.919e-02 -0.1283760 -1.286455 0.547966 0.479617 1.133e-01  
## 694 -3.229e-01 -1.1448988 -0.526240 0.538671 1.021816 5.085e-01  
## 695 5.758e-01 0.1672371 -1.462213 -0.289077 -0.669280 -1.077e+00  
## 696 3.921e-02 -0.2192817 -1.511512 0.286329 -0.562748 -5.257e-01  
## 697 7.075e-02 -0.5768475 -0.972512 0.319429 0.042539 6.406e-01  
## 698 3.775e-01 -0.0701908 -1.375944 0.654389 0.684389 -4.076e-01  
## 699 -2.325e-01 -1.1098824 -0.653400 -0.060814 0.498115 -1.158e+00  
## 700 -3.010e-01 -0.4950683 -0.816718 0.229057 0.092830 -8.362e-01  
## 701 -3.665e-01 -0.3941342 -0.807629 0.106246 0.315241 2.665e-01  
## 702 5.900e-01 0.4026760 -1.713593 0.011449 0.617743 -3.597e-01  
## 703 6.110e-01 0.3252070 -1.549294 0.070655 0.905604 -4.947e-01  
## 704 -3.800e-01 -0.5793199 -0.887882 0.719619 0.805064 -8.710e-02  
## 705 4.778e-01 0.3495411 -1.567102 0.125360 -0.251308 3.269e-02  
## 706 -5.088e-01 -0.3441929 -0.796078 -0.257799 0.380582 7.012e-01  
## 707 -4.662e-01 -0.2785240 -0.775379 -0.270089 -0.121435 -6.096e-01  
## 708 6.324e-01 0.0438663 -1.883624 0.091099 -1.461899 -3.314e+00  
## 709 4.666e-01 0.3179569 -1.652827 -0.066334 0.059911 -7.381e-01  
## 710 -1.270e-02 -0.2478292 -0.676509 0.087944 -0.262051 -1.744e+00  
## 711 -1.681e-01 -0.3936325 -1.007658 0.426513 0.146179 2.342e-01  
## 712 -6.403e-01 -0.7077745 -0.597873 0.293426 0.807007 2.088e-01  
## 713 -7.471e-01 -0.6627171 -0.628534 0.179497 0.415350 -1.087e-01  
## 714 -8.974e-02 -0.8164816 -1.077503 0.513547 0.850190 -2.389e-01  
## 715 -1.469e-01 -0.8681867 -1.018346 0.831045 1.383939 -2.411e-01  
## 716 -9.127e-02 -0.2890520 -0.895094 0.406540 0.405353 -1.932e-01  
## 717 4.336e-01 0.1354732 -1.796579 0.420930 -0.295179 -1.591e+00  
## 718 -6.532e-02 -0.8100841 -1.042290 0.818523 1.215486 -2.589e-01  
## 719 -2.513e-01 -0.9783148 -0.504993 0.549770 1.278494 -7.205e-01  
## 720 -7.715e-01 -1.0057984 -0.435403 0.004719 0.626366 2.360e-01  
## 721 -2.084e-01 -0.7828573 -1.047054 0.736992 0.840076 5.247e-01  
## 722 -1.069e-01 -0.9986607 -0.754827 0.086287 0.200161 -1.283e+00  
## 723 -2.132e-02 -0.5333118 -1.109022 0.714514 0.367348 5.837e-01  
## 724 -1.685e-01 -0.7160420 -0.754501 0.858854 0.844471 2.806e-01  
## 725 -8.411e-01 -0.5500178 -0.686569 0.942637 1.689612 4.620e-02  
## 726 -4.023e-01 -0.6404838 -0.668426 0.584327 1.266484 -1.111e+00  
## 727 -4.067e-01 -0.4224669 -0.942065 0.786388 1.244207 -6.459e-01  
## 728 -4.756e-01 -0.7878939 -0.674873 0.415664 0.375264 1.974e-01  
## 729 -3.888e-01 -0.9819536 -0.850939 0.808975 1.430213 8.316e-02  
## 730 -3.520e-01 -1.0416815 -0.799692 0.474806 1.007981 1.246e+00  
## 731 -1.417e+00 -1.0636993 0.136716 -0.167363 0.669482 1.245e+00  
## 732 -1.011e+00 -0.7277128 -0.224582 0.105015 0.230821 1.315e+00  
## 733 -7.573e-01 -1.0473409 -0.371052 0.207531 0.604300 9.033e-01  
## 734 -8.673e-01 -0.8617034 -0.442676 0.093852 0.544130 7.479e-01  
## 735 -7.782e-01 -0.9169147 -0.503990 0.269735 0.735120 7.121e-01  
## 736 1.463e-01 -1.9309708 -0.330776 -0.635496 -0.779867 4.665e+00  
## 737 4.856e-02 -1.3293428 -0.508911 -0.977587 -1.163540 3.199e+00  
## 738 -5.035e-01 -1.9045742 0.210919 -0.320108 -0.129171 2.043e+00  
## 739 7.562e-02 -1.2875607 -0.504592 -0.444064 -0.557235 1.435e+00  
## 740 -1.589e-01 -1.5739629 -0.174936 -0.511533 -1.038631 1.527e+00  
## 741 3.762e-01 -1.6463160 -0.222244 -0.624685 -1.062667 8.042e-01  
## 742 9.311e-02 -1.2234705 -0.538862 -0.692897 -0.903195 1.464e+00  
## 743 1.594e-01 -1.1455173 -0.999673 -0.190170 -1.136841 3.554e+00  
## 744 2.120e-01 -1.1808450 -0.342550 -0.900655 -1.281753 1.405e+00  
## 745 2.189e-01 -0.7819143 -0.885975 -0.228670 -1.289749 2.221e+00  
## 746 -4.899e-01 -2.0500949 0.308459 -0.807305 -0.401236 1.626e+00  
## 747 4.009e-01 -0.6039868 -1.032660 -0.578888 -1.204152 1.418e+00  
## 748 -5.068e-01 -1.8988373 0.101129 -0.169119 0.134546 1.348e+00  
## 749 3.990e-02 -1.1646849 -0.315601 -0.300304 -0.339099 1.320e+00  
## 750 -7.837e-01 -2.1945024 0.567857 -0.580319 -0.073390 2.126e+00  
## 751 -1.014e+00 -2.1272698 0.808079 -1.179418 -0.580172 1.401e+00  
## 752 -1.477e-01 -1.9885387 -0.048749 -0.624578 -0.252907 3.273e+00  
## 753 -1.349e-01 -2.2910716 0.027928 -1.160701 -0.798928 4.025e+00  
## 754 -5.903e-01 -2.2054592 0.528152 -0.927648 -0.381241 1.765e+00  
## 755 -2.339e-01 -2.0085285 0.034473 0.090856 0.639796 2.035e+00  
## 756 9.098e-02 -1.8970223 -0.181846 -0.210297 0.061153 1.343e+00  
## 757 1.460e-01 -1.1711614 -0.822617 -0.379405 -1.012837 1.782e+00  
## 758 -3.666e-01 -1.9718047 0.344479 -0.685786 -0.657153 9.763e-01  
## 759 -9.457e-02 -1.1623498 -0.559964 -0.764368 -1.477758 2.008e+00  
## 760 -3.590e-01 -1.7406545 0.009636 -0.160471 0.250752 1.706e+00  
## 761 7.922e-05 -1.8780938 -0.492765 0.191392 0.809162 1.035e+00  
## 762 5.399e-01 -1.3149908 -0.785189 -0.636679 -0.275203 2.396e+00  
## 763 1.478e-02 -1.3519230 -0.636376 -0.355631 -0.325130 2.737e+00  
## 764 -1.742e-01 -1.4137573 -0.291914 -0.863136 -0.712480 1.774e+00  
## 765 -1.114e-01 -1.2802827 -0.126965 -0.681681 -0.537953 3.125e-01  
## 766 -2.174e-01 -0.7962255 -0.412723 -0.958292 -1.330079 1.920e+00  
## 767 8.430e-01 0.7077229 -1.159756 0.491358 -0.381209 -2.135e-01  
## 768 5.425e-01 0.6191375 -0.893123 0.099254 0.009564 -3.178e-02  
## 769 8.409e-01 1.0747109 -0.894432 0.345880 -0.762168 2.422e-01  
## 770 6.733e-01 0.3720609 -1.617789 -0.080944 -0.511768 -2.259e-01  
## 771 -4.252e-01 -0.4724563 -0.923756 -0.269648 0.048999 -5.272e-02  
## 772 7.175e-01 0.6402990 -1.230031 0.043813 -0.447205 -4.209e-01  
## 773 4.125e-01 -0.1388563 -1.239569 -0.301629 -1.162979 8.463e-01  
## 774 6.125e-02 -0.2350140 -0.995183 0.290539 0.310522 2.222e-01  
## 775 9.045e-01 0.6741963 -1.431869 0.044063 -0.181906 -7.511e-01  
## 776 8.332e-01 0.8989531 -1.446437 0.305310 -0.469424 -6.739e-01  
## 777 5.358e-01 0.6329448 -1.355816 0.174389 -0.549981 3.450e-01  
## 778 7.594e-01 0.6400811 -1.418919 0.146597 -0.082732 -4.037e-01  
## 779 8.664e-01 0.8384823 -1.518875 -0.012948 -0.541530 -2.966e-01  
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## 781 3.858e-01 0.3995950 -1.151148 0.121230 -0.909272 -6.904e-01  
## 782 3.632e-01 0.4557560 -1.422560 0.547978 -0.265927 -1.964e-01  
## 783 3.968e-01 0.3931321 -1.185399 0.579548 -0.793546 -3.944e-01  
## 784 4.218e-01 0.2894291 -1.460662 0.634639 -0.138628 -5.340e-01  
## 785 7.822e-01 0.3797312 -1.552082 0.210491 -0.024896 -1.519e-01  
## 786 3.728e-01 0.7316910 -1.269530 0.713851 -0.792601 -9.364e-02  
## 787 7.953e-01 0.6685714 -1.795163 0.464204 -1.569190 -1.377e+00  
## 788 5.652e-01 0.1221435 -1.589323 0.523000 0.004536 -3.336e-01  
## 789 -6.191e-01 0.0905213 -0.218018 -0.132527 -0.322962 1.272e+00  
## 790 -5.651e-01 0.1640070 -0.257088 -0.174355 -0.786661 -3.164e-01  
## 791 -2.289e-01 0.3041754 -0.766107 0.240898 -0.393783 -4.348e-01  
## 792 5.161e-01 0.2584611 -2.107220 0.726961 -0.276217 -1.155e+00  
## 793 6.249e-02 -0.0884326 -1.148569 0.119233 -0.194461 7.027e-02  
## 794 -4.884e-01 0.1960504 -0.489171 0.208446 -0.562649 -5.439e-01  
## 795 -1.914e-01 0.1161434 -0.644590 -0.025685 -0.007440 -3.169e-01  
## 796 -8.078e-01 0.2843507 -0.136925 0.195796 -0.362706 1.601e-01  
## 797 -2.405e-02 0.4005893 -0.773040 0.477121 -0.053248 -1.091e-01  
## 798 -5.225e-01 0.2286351 -0.479394 0.056309 -0.526404 -5.105e-02  
## 799 -9.373e-01 0.1041063 -0.214587 -0.119478 -0.358212 6.115e-01  
## 800 -9.381e-01 0.1373227 -0.156630 -0.637967 -0.864657 2.746e-01  
## 801 -3.407e-01 0.2896574 -0.569654 0.307628 0.218504 -2.868e-02  
## 802 -3.259e-01 0.4545164 -0.546740 -0.003605 -0.124953 3.144e-01  
## 803 3.961e-02 -0.0954673 -0.857142 0.450227 -0.277415 2.868e-01  
## 804 -3.868e-01 0.0872765 -0.475085 0.436593 -0.093844 -1.399e-01  
## 805 -8.182e-01 0.0009151 -0.314941 -0.059723 -0.260260 1.601e-01  
## 806 -1.148e+00 -0.2686471 -0.085553 -0.397638 -0.230678 4.920e-01  
## 807 2.591e-01 0.0514784 -1.093618 0.540964 -0.045461 1.938e-01  
## 808 5.709e-01 0.5486009 -1.531625 0.418837 -0.098516 -5.689e-01  
## 809 4.127e-02 -0.0937084 -1.114912 -0.341850 0.318149 -3.902e-01  
## 810 1.506e-01 -0.0694372 -1.163289 0.478148 -0.156033 -9.848e-02  
## 811 2.053e-01 -0.0472973 -1.082223 0.698164 0.518653 1.241e-01  
## 812 3.908e-01 0.1945765 -1.080668 0.290701 0.623762 -2.747e-01  
## 813 -7.517e-02 -0.1353216 -0.764547 0.322822 -0.008460 -1.047e-01  
## 814 2.870e-01 0.1622871 -1.081030 0.878827 0.238081 -5.014e-01  
## 815 5.964e-01 0.1785083 -1.434852 0.939668 0.283480 -6.360e-01  
## 816 -2.662e-02 -0.3188049 -0.970717 0.589320 0.698715 6.418e-02  
## 817 8.198e-02 0.0112572 -0.787786 0.444458 0.085853 -9.013e-02  
## 818 -5.257e-02 -0.0722921 -1.224506 0.499582 -0.326303 -4.583e-01  
## 819 1.015e-01 0.0376874 -0.885575 0.501234 0.055180 -2.689e-01  
## 820 -2.597e-02 -0.0802544 -0.637668 0.458636 0.100237 -1.041e-02  
## 821 5.701e-01 0.4086454 -0.938755 1.161651 0.362903 -5.005e-01  
## 822 3.189e-01 -0.1809040 -0.770222 1.077699 0.678488 -4.237e-01  
## 823 2.429e-01 -0.3208228 -0.913662 1.152189 0.882660 -5.133e-01  
## 824 -1.393e-01 -0.1623458 -0.684230 0.340736 0.547479 -1.171e-01  
## 825 -3.117e-01 -0.2980511 -0.633484 0.449566 0.089250 -8.518e-02  
## 826 -8.477e-01 -0.1249857 -0.716569 0.005772 -0.252631 -2.207e-01  
## 827 2.092e-01 0.0311257 -0.989669 0.941151 0.602058 -3.322e-01  
## 828 2.148e-03 0.0675488 -0.837828 0.745754 -0.124461 -3.061e-01  
## 829 -2.565e-01 -0.1818540 -0.141981 1.098659 0.248494 2.660e-01  
## 830 2.484e-01 0.2597588 -1.229181 0.719943 -0.056474 -2.494e-01  
## 831 9.953e-02 -0.1286615 -0.793117 0.872871 0.857115 -4.036e-03  
##   
##   
## Site constraints (linear combinations of constraining variables)  
##   
## CCA1 CA1 CA2 CA3 CA4 CA5  
## 1 -0.048648 0.4098269 0.685043 1.490370 -0.203050 1.496e-01  
## 2 -0.433842 0.1295345 1.083965 0.941558 1.772352 1.446e-01  
## 3 -0.713983 0.5309538 1.105342 1.537697 0.720088 4.451e-01  
## 4 -0.385206 0.7195442 0.839601 1.083123 2.048062 -3.595e-01  
## 5 -0.398824 0.2688759 0.709777 1.677637 0.828011 -4.893e-01  
## 6 -0.422169 0.3462375 1.332996 1.914026 0.420830 3.286e-01  
## 7 0.023332 -0.1834813 0.799825 1.160375 1.335558 3.150e-01  
## 8 -0.410497 0.0072297 1.021005 0.994298 0.311268 8.891e-02  
## 9 -0.560294 0.0545214 0.380910 1.834038 0.927622 -1.163e-01  
## 10 -0.573912 -0.2641596 0.480847 1.068436 0.791298 -6.817e-01  
## 11 -0.941597 -0.0667286 0.970212 1.337147 0.537544 -8.660e-02  
## 12 -0.307389 -0.1333655 1.115287 1.697010 0.930370 1.081e-01  
## 13 -0.453296 0.0173999 1.770392 1.535404 -0.435031 4.068e-01  
## 14 -0.311280 -0.7705514 0.465782 1.215606 1.131172 -8.048e-01  
## 15 -0.939651 0.0933942 0.320740 1.995806 1.092219 -4.876e-01  
## 16 -0.412442 -0.1821539 1.144301 1.473900 0.934887 -1.205e-01  
## 17 -0.560294 -0.3968327 1.521365 0.414103 -0.077126 5.521e-01  
## 18 -0.023358 0.0410599 1.303361 0.248553 1.114907 3.419e-01  
## 19 -0.966887 0.2202940 0.274901 1.593968 0.528188 -1.887e-01  
## 20 -0.324898 -0.6190711 1.367464 0.476094 0.580175 -4.378e-02  
## 21 -0.420224 -0.3112081 0.518691 1.332434 0.715203 -2.292e-01  
## 22 -0.291826 -0.2856827 0.995570 0.956046 0.375076 -1.573e-01  
## 23 -0.363807 -0.9866162 0.784510 -0.071101 0.548463 3.357e-01  
## 24 -0.509713 -0.8869972 0.329716 1.556244 1.766806 -8.075e-01  
## 25 -0.461078 -1.1421474 0.490099 0.881176 1.486004 -8.297e-01  
## 26 -0.776236 -0.2447810 0.501329 2.091827 1.559532 -1.857e-01  
## 27 -0.601148 -1.1298130 0.510311 0.724778 1.270069 -8.005e-01  
## 28 -0.743164 -0.5783574 0.651524 1.252532 0.435142 -2.519e-01  
## 29 -0.519440 -0.2976166 0.981921 1.109309 0.499218 -7.524e-02  
## 30 -0.480532 -0.5516617 0.565088 1.604600 1.518249 2.176e-01  
## 31 -0.529168 -0.8377556 0.012748 0.881491 0.980632 -3.354e-01  
## 32 -0.515550 -0.7868889 0.869785 1.111814 1.124286 -6.783e-01  
## 33 -0.645893 -0.8187267 0.602765 1.231577 1.571616 -5.419e-01  
## 34 -0.583639 -0.1933299 0.841236 1.617361 1.003608 7.020e-02  
## 35 -0.828762 -0.4156677 0.631105 1.354058 0.956873 -1.739e-02  
## 36 -0.871562 -0.9187578 0.645853 0.711558 1.153201 -7.472e-02  
## 37 -0.519440 -0.6720234 1.715481 0.832353 0.390670 9.290e-01  
## 38 -0.902688 -0.5789212 -0.410096 0.927658 0.602853 -6.318e-01  
## 39 -0.262645 -0.9540933 0.221263 0.742093 0.508428 -3.868e-01  
## 40 -0.262645 -1.2653765 0.075127 0.457761 1.201224 -4.261e-01  
## 41 -0.807363 -0.1998488 0.162018 2.626327 1.655567 -5.705e-01  
## 42 -0.595312 -1.2208557 0.936273 0.360184 1.144384 -5.514e-01  
## 43 -0.359916 -1.2241480 0.991999 0.120776 1.035517 -6.364e-01  
## 44 -0.725655 -0.7859172 0.861074 0.626949 1.026336 -1.213e+00  
## 45 -0.606984 -1.0064814 1.344925 0.321911 0.739350 3.976e-01  
## 46 -0.743164 -1.3667291 1.054869 -0.775966 0.939884 -1.866e-01  
## 47 -0.968833 -1.2512155 0.901635 -0.486383 1.006095 -2.973e-01  
## 48 -0.840435 -1.1545302 1.261804 -0.014034 0.904101 -8.164e-01  
## 49 -1.219792 0.2190636 0.839013 1.195329 1.882083 -2.276e-01  
## 50 -0.966887 -0.5498671 1.220172 0.889391 0.736498 -7.543e-01  
## 51 -1.134194 -0.7098136 1.267973 -0.073786 0.425761 8.909e-01  
## 52 -0.996069 -1.0838115 1.386782 -0.528164 0.601162 2.589e-01  
## 53 -1.108903 -0.9007346 1.821953 -0.147090 0.685156 -9.089e-02  
## 54 -1.387098 -0.8497046 0.319688 0.192879 1.417856 -3.409e-01  
## 55 -1.398771 -0.6493612 1.421836 0.297061 0.714489 -5.681e-01  
## 56 -1.186720 -0.8133717 1.207087 0.334493 1.060374 1.133e-01  
## 57 -1.011632 -1.4993035 0.605000 1.210186 2.694341 -1.181e+00  
## 58 -1.367644 -0.8406607 1.259537 1.115445 2.002324 1.074e-01  
## 59 -1.390989 -0.4469828 1.392602 0.260386 0.533017 -1.114e-03  
## 60 -1.381262 0.1247503 1.533829 1.692886 0.806431 1.997e-01  
## 61 -1.138085 -0.4450431 1.016063 0.246379 0.492843 -3.431e-01  
## 62 -1.379317 -0.2448476 1.045507 0.481562 0.755904 8.092e-01  
## 63 -1.239246 -0.2851476 1.215492 0.674220 0.515259 7.525e-01  
## 64 -1.447407 -0.9899235 1.572337 -1.097502 -0.111522 -5.637e-01  
## 65 -1.762565 -0.6994416 1.157023 -0.682523 0.544799 -1.608e-01  
## 66 -1.322900 -0.0877931 0.933200 0.886836 0.357437 -8.511e-02  
## 67 -1.676966 -0.6595198 1.016327 -0.384191 0.308210 2.947e-01  
## 68 -1.764510 -0.5750395 0.835663 0.803355 1.255999 -1.944e-01  
## 69 -2.153595 -0.0163951 1.584502 0.307689 0.048450 1.524e-01  
## 70 -1.595259 0.3870704 0.579642 0.487433 0.276267 -1.471e-02  
## 71 -1.591368 0.3726565 1.114003 0.183902 -0.618406 1.783e-01  
## 72 -1.599149 0.1374661 1.081332 0.641627 0.550670 3.043e-01  
## 73 -1.606931 0.7384134 1.401394 0.606755 -0.531625 3.793e-01  
## 74 -1.618604 0.0752976 1.179562 0.177628 -0.110842 -1.021e+00  
## 75 -1.657512 0.6395207 0.667190 -0.115590 0.068992 6.211e-01  
## 76 -1.657512 0.2416854 1.207820 -0.825621 -0.847894 -1.059e+00  
## 77 -1.698366 0.9186681 0.648968 0.783817 -0.001525 5.555e-02  
## 78 -1.719766 0.4203530 0.455349 -0.268267 -0.221887 6.868e-01  
## 79 -1.651676 0.7799182 0.775414 0.362775 -0.850972 1.042e-01  
## 80 -1.647785 0.8159036 1.265244 0.083864 -0.941153 9.945e-01  
## 81 -1.704202 -0.0324538 0.766386 -0.952675 -0.771263 -5.798e-01  
## 82 -1.690584 0.2813546 1.059217 -0.417390 -0.395744 1.713e-01  
## 83 -1.657512 0.2629788 0.847744 -0.319996 0.043843 8.212e-01  
## 84 -1.715875 0.5527099 0.904387 0.032861 -0.665981 2.066e-01  
## 85 -1.686693 -0.0742132 1.833382 -1.326175 -0.821012 4.872e-01  
## 86 -1.696421 0.6673891 1.032758 -0.802867 -0.878253 1.146e-01  
## 87 -1.692530 0.5144758 0.814606 -0.027260 -0.098729 5.735e-02  
## 88 -1.758674 0.2947585 -0.191296 -0.137336 0.079885 -4.232e-01  
## 89 -1.748947 0.7231164 0.285874 0.432254 -0.467433 -6.778e-01  
## 90 -1.729493 0.8060298 0.264607 0.763602 0.023864 3.933e-01  
## 91 -1.824818 -0.0632455 1.846953 -0.990875 -0.879502 3.170e-01  
## 92 -1.807310 -0.0648359 1.840561 -1.862051 -0.934840 1.277e+00  
## 93 -1.719766 0.7616692 0.442816 -0.280587 -0.223486 4.863e-02  
## 94 -1.756729 0.4917220 0.492481 0.019781 0.011590 3.112e-01  
## 95 -1.774237 0.6597488 0.921531 0.176314 -0.871847 -6.969e-02  
## 96 -1.929871 0.2872450 0.288669 -0.572634 -0.219811 2.237e-01  
## 97 -1.908471 -0.2767838 1.407102 -1.806561 -0.997667 6.550e-02  
## 98 -1.783964 0.5099539 1.585916 -0.139638 -0.947116 1.972e-02  
## 99 -1.822873 0.3866953 1.317051 -0.263340 -0.873574 -5.886e-01  
## 100 -1.949325 -0.0152220 0.763201 -1.225221 -0.578321 -2.621e-01  
## 101 -2.032978 0.4879080 2.148008 -1.749366 -2.115296 4.861e-01  
## 102 -1.957107 0.8492176 1.680809 -1.373916 -1.923682 6.013e-01  
## 103 -2.042706 0.5141597 0.962251 -0.834859 -0.969292 -4.144e-01  
## 104 -2.202230 -0.4767831 0.886261 -0.607909 0.479106 -1.452e+00  
## 105 -2.470698 -0.2589783 1.091514 -0.730226 -0.132635 -1.049e+00  
## 106 -2.532952 -0.5667310 2.579193 -3.386656 -1.980525 1.777e-02  
## 107 -2.554351 -0.5333208 1.737785 -1.983937 -0.884311 -4.569e-01  
## 108 -2.525170 -0.6199750 1.440230 -1.895994 -0.405164 -1.741e-01  
## 109 -2.367591 -0.4893485 0.900525 -1.217408 -0.136242 -5.106e-01  
## 110 -2.348137 -0.5409386 1.538002 -2.011079 -0.393296 -3.336e-01  
## 111 -2.698313 0.3319639 1.422680 -0.980339 -1.467116 -1.310e+00  
## 112 -2.542679 -0.8411410 0.814679 -1.705818 -0.314155 -1.686e+00  
## 113 -2.737221 -0.7275973 1.691477 -2.336105 -1.279904 -3.581e+00  
## 114 -2.608823 -0.3640256 0.749140 -0.665620 0.382975 -1.632e+00  
## 115 -0.229573 -0.5031599 -0.405852 1.134286 1.785124 -5.677e-01  
## 116 -0.120629 0.2499269 -0.099678 1.323945 0.442589 -6.572e-01  
## 117 -0.073939 0.5486040 -0.553021 0.917941 0.179118 -9.370e-02  
## 118 -0.040867 -0.8089109 0.817209 0.466693 0.424012 1.808e-01  
## 119 1.852029 -1.7720310 0.957571 1.545004 1.761578 -5.037e-01  
## 120 1.852029 -2.0022114 1.027192 1.415913 1.830798 -6.064e-01  
## 121 1.743085 -2.0272969 1.129641 0.248568 -0.021083 -1.505e+00  
## 122 1.706122 -2.1543734 0.379829 0.451751 1.103009 -1.429e-01  
## 123 1.772266 -1.9172883 0.460174 0.386752 0.921720 -2.677e-01  
## 124 1.832574 -1.8354910 0.669692 0.520194 0.610239 -1.428e-02  
## 125 1.885101 -2.0337993 0.970516 0.404016 0.715013 -1.432e+00  
## 126 1.832574 -2.0390124 0.411911 0.233768 0.822600 -1.339e-01  
## 127 1.885101 -1.9864546 1.036938 0.472601 0.666142 -1.385e+00  
## 128 1.828683 -2.3384814 1.205238 0.266596 0.559331 -5.293e-01  
## 129 1.698340 -2.0910814 0.482864 0.278396 0.451367 -1.021e+00  
## 131 1.420145 -2.0663430 0.322810 0.703018 1.229204 -1.227e+00  
## 132 1.704176 -2.0527655 0.799238 -0.037033 -0.012126 -1.382e+00  
## 133 1.665268 -1.9193439 0.335949 0.428745 0.951658 2.299e-01  
## 134 1.894828 -2.5425624 1.059972 1.151568 1.947047 -6.386e-01  
## 135 1.894828 -2.4761815 1.195420 0.051800 1.057646 -1.769e-01  
## 136 1.717794 -1.8917975 0.362960 0.660267 0.804706 -8.939e-01  
## 137 1.717794 -1.9096397 0.419424 0.163290 0.437617 -3.967e-01  
## 138 1.696395 -2.4088252 0.515009 -0.076124 0.607010 -1.563e+00  
## 139 1.764485 -2.2243273 0.645850 -0.625746 -0.786404 -1.446e+00  
## 140 1.764485 -2.4802269 0.693842 -1.069231 -1.548462 -8.001e-01  
## 141 1.719740 -2.0173122 0.824149 -0.349458 -0.541738 -2.219e+00  
## 142 1.719740 -2.7671191 1.039484 -1.061155 -0.190041 -2.721e+00  
## 143 1.622469 -2.0863979 0.803035 -0.248575 -0.314857 -1.009e+00  
## 144 1.719740 -1.9950265 0.612167 0.023561 -0.201982 -2.261e+00  
## 145 1.513525 -2.1641702 0.542447 -1.233793 -1.428905 -3.136e+00  
## 146 1.649705 -2.5293305 1.083535 -1.097929 -0.887204 -2.714e+00  
## 147 1.708067 -1.8042581 1.140981 -0.405376 -0.235457 3.293e-01  
## 148 1.581615 -1.5447656 1.066685 0.207382 -0.026951 3.591e-02  
## 149 1.863701 -1.6608482 1.783667 -0.798175 -1.129801 -1.425e-01  
## 150 1.863701 -1.8085639 1.459041 -0.362658 -0.580179 3.282e-01  
## 151 1.581615 -2.5879768 1.645510 -2.411684 -3.315551 -2.983e+00  
## 152 1.581615 -2.7276629 1.526264 -2.592024 -3.229229 -3.208e+00  
## 153 1.554379 -2.9584365 1.958168 -3.290874 -4.199566 -5.711e+00  
## 154 1.721685 -2.9022456 1.705751 -2.404447 -2.622450 -4.191e+00  
## 155 1.519361 -1.8338450 1.111554 0.699108 0.862698 7.458e-01  
## 156 1.470726 -1.8429375 1.203616 -0.159430 -0.334773 1.132e+00  
## 157 1.558270 -1.5783245 1.710631 0.224542 -0.296171 1.147e+00  
## 158 1.211985 -1.9137862 1.247662 -0.078296 0.493270 1.060e+00  
## 159 0.875427 -1.3695354 -0.236776 0.024229 -0.811391 -1.886e+00  
## 160 0.875427 -1.3140075 -0.164092 0.240328 -0.517095 -1.715e+00  
## 161 0.920172 -1.3589857 -0.141649 -0.001639 -1.114607 -2.079e+00  
## 162 0.760647 -1.0280822 0.976143 0.923783 -0.847615 6.038e-01  
## 163 1.171131 -1.7723651 0.849889 0.491043 0.178325 -1.730e+00  
## 164 0.974643 -1.5057200 -0.122592 -0.483342 -1.655162 -3.934e+00  
## 165 1.268402 -1.8249331 -0.112428 -0.204669 -0.543642 -1.952e+00  
## 166 1.250893 -1.6825300 0.553886 0.113515 -0.138029 -1.764e+00  
## 167 0.630304 -1.5588619 0.346161 -0.463088 -1.318828 -3.010e+00  
## 168 1.184749 -1.8236066 0.556710 0.318658 0.641152 7.312e-01  
## 169 0.673103 -2.4046138 0.696280 -1.147337 0.028037 1.587e+00  
## 170 -0.284044 -2.0088826 1.391417 -2.213009 -1.414435 -4.060e+00  
## 171 0.186748 -2.4293460 2.053958 -2.654898 -1.951782 -5.138e+00  
## 172 -0.214009 -1.5688288 0.555381 -0.694316 0.506216 -8.151e-01  
## 173 0.112822 -2.1997319 1.644960 -0.806907 0.230035 -3.876e+00  
## 174 -0.743164 -1.5538173 1.608720 -1.817360 -0.207218 -1.684e+00  
## 175 -0.480532 -1.5975341 0.440288 1.219214 2.318443 -1.807e+00  
## 176 -0.480532 -1.2849327 0.462943 1.390134 1.997243 -1.269e+00  
## 177 -1.381262 -1.3253807 1.720330 -2.359754 -0.740979 1.760e+00  
## 178 -0.692583 0.0456912 -1.356127 0.185353 -0.111749 1.823e-02  
## 179 -0.097284 -1.3462263 -0.174182 -0.653733 -0.190846 1.488e+00  
## 180 -0.606984 -0.7468882 -0.402204 -0.696234 -0.428320 1.490e+00  
## 181 -0.219846 -0.6446484 -0.682027 0.604950 0.675773 6.411e-01  
## 182 -0.241245 -1.1125920 -0.763155 0.200004 1.215596 2.454e+00  
## 183 -0.321007 -1.2381828 -0.925132 0.613505 1.185505 1.400e+00  
## 184 -0.287935 -1.1718935 -0.801109 0.649615 1.325042 3.572e-01  
## 185 -0.387152 -0.8130698 -0.484447 0.817861 1.036006 1.711e-01  
## 186 -0.321007 -0.9999469 -0.842860 0.743396 1.408244 3.962e-01  
## 187 -0.587530 -0.7155109 -1.095896 0.153087 0.896881 1.936e-02  
## 188 -0.869616 -0.4819695 -0.827707 0.887555 1.305782 5.861e-02  
## 189 -0.365752 -1.5498886 -0.461549 0.195104 1.080667 5.971e-01  
## 190 -0.429951 -0.9336262 -0.793484 0.029155 0.527898 -1.453e+00  
## 191 -0.369643 -1.0509927 -0.527712 0.070600 0.610244 6.714e-01  
## 192 -0.499986 -0.8594713 -0.339501 0.119747 0.972649 2.054e-01  
## 193 -0.498041 -0.8397789 -0.952508 0.972273 1.507163 -2.286e-01  
## 194 -0.381315 -0.9249251 -0.755322 0.519783 1.220214 5.735e-02  
## 195 -0.429951 -0.6857475 -0.570544 0.098231 0.053926 -7.644e-01  
## 196 -0.881289 -0.6935491 -1.124066 0.547633 0.761380 -8.571e-02  
## 197 -0.509713 -0.9521644 -0.135184 -0.252786 0.738451 2.074e-02  
## 198 -0.657565 -0.6116032 -0.739045 0.474146 0.779768 1.927e-01  
## 199 -0.410497 -1.0174957 -0.793839 0.436227 1.220675 3.579e-01  
## 200 -0.439678 -0.7925427 -0.702715 0.090562 0.859457 9.384e-02  
## 201 -0.597257 -1.0431670 -0.453969 0.091143 0.653138 -8.211e-01  
## 202 -0.612821 -0.9320295 -0.489361 0.357591 1.288090 -7.651e-02  
## 203 -0.468859 -0.9708487 -0.461526 0.465332 1.334370 -2.846e-01  
## 204 -0.476641 -0.6769472 -0.800136 0.244960 0.649609 5.503e-01  
## 205 -0.484423 -0.9765367 -0.713295 0.743297 1.880276 7.576e-02  
## 206 -0.684801 -0.4002242 -0.767841 0.610108 0.237674 -1.100e-01  
## 207 -0.509713 -0.8384902 -0.917284 0.507724 0.628375 -1.831e-01  
## 208 -0.591421 -1.1515974 -0.834704 0.279343 0.959840 1.437e+00  
## 209 -0.634220 -0.8238578 -0.445136 0.443029 0.440851 -5.466e-01  
## 210 -0.608930 -0.9523161 -0.847507 0.504697 0.995546 2.755e-01  
## 211 -0.686747 -1.0239539 -0.821358 0.692747 1.247876 -1.082e-01  
## 212 -0.700365 -1.1667985 -1.038669 0.865461 1.565849 -4.951e-01  
## 213 -0.758727 -1.0627894 -0.470044 0.094439 1.084299 4.534e-01  
## 214 -0.772345 -0.9470779 -0.942654 0.559408 1.201086 5.170e-01  
## 215 -0.704255 -1.0777035 -0.442728 0.369617 1.030007 5.272e-01  
## 216 -0.752891 -0.9304413 -0.837923 0.500268 1.110392 2.016e-01  
## 217 -0.787909 -1.2608477 -0.480370 0.275572 0.666231 8.411e-01  
## 218 -0.859889 -1.0557946 -0.685298 0.550851 1.184560 3.825e-03  
## 219 -0.879343 -0.9260451 -0.331308 0.520814 0.999913 6.291e-01  
## 220 -1.476588 0.4604699 0.189223 -0.849158 -1.198327 1.034e+00  
## 221 -1.494097 0.4382918 0.034258 -0.965153 -0.859173 4.514e-01  
## 222 -1.511605 0.5244842 -0.156560 -0.240203 -0.434487 2.472e-01  
## 223 -1.521333 0.5977640 0.026550 -0.378411 -0.701508 5.508e-01  
## 224 -1.470752 0.2796952 0.345390 -1.099445 -0.857276 2.061e-01  
## 225 -1.439625 0.4270582 0.049347 -0.507662 -0.593029 2.598e-01  
## 226 -1.245083 0.4622102 -0.056958 0.935770 0.401737 9.305e-01  
## 227 -1.184775 0.1411974 0.728860 -0.784414 -0.889189 6.100e-01  
## 228 -1.167266 0.3102350 0.921710 -0.405507 -0.454984 1.206e+00  
## 229 -1.132248 0.1270608 0.778912 -0.785902 -0.725649 1.791e+00  
## 230 -1.153648 0.4489950 0.592561 -0.782830 -0.665528 1.676e+00  
## 231 -1.217847 0.5158798 0.296290 -0.510298 -0.710170 1.076e+00  
## 232 -1.237301 0.2835554 0.076077 -0.975509 -0.696726 1.301e+00  
## 233 -1.233410 0.3274816 0.031794 -0.404228 -0.523282 2.538e-01  
## 234 -1.256755 0.2582432 0.594616 -0.739451 -0.764789 7.954e-01  
## 235 -1.278155 0.2016119 0.613036 -0.791194 -0.518692 1.667e+00  
## 236 -1.276209 -0.2645456 0.671316 -1.138711 -0.857253 1.255e+00  
## 237 -1.332627 -0.0845750 0.842842 -1.596249 -1.418036 1.384e+00  
## 238 -1.293718 -0.1191677 0.580313 -1.039091 -0.352683 1.522e+00  
## 239 -1.354026 -0.1919148 1.086074 -1.710839 -1.001319 1.487e+00  
## 240 -1.352081 -0.1091436 1.009634 -1.647644 -1.231193 1.910e+00  
## 241 -1.511605 -0.1219979 1.069745 -1.365640 -0.672502 1.883e+00  
## 242 -1.531060 -0.1201995 0.856373 -1.613555 -0.902503 2.009e+00  
## 243 -1.564132 0.0850571 0.707882 -0.831676 -0.242864 1.182e+00  
## 244 -1.466861 -0.1267013 0.856028 -1.322311 -0.733374 5.825e-01  
## 245 -1.558296 -0.1057807 1.055833 -1.330571 -0.610110 1.634e+00  
## 246 -1.548568 -0.3082127 0.896306 -1.926711 -0.770170 1.954e+00  
## 247 -1.589422 -0.2147257 0.268571 -1.075012 -0.224368 9.738e-01  
## 248 -1.636112 -0.1474190 0.374920 -0.801143 -0.066657 1.005e+00  
## 249 -1.632222 -0.1636290 0.367245 -1.028074 -0.399834 1.258e+00  
## 250 -1.476588 0.0621000 -0.096845 0.135948 0.262083 6.613e-01  
## 251 -1.647785 -0.2486219 0.684388 -1.581940 -0.581575 1.082e+00  
## 252 -1.657512 -0.2182528 0.205425 -1.010258 -0.428226 1.224e+00  
## 253 -1.626385 -0.4022346 0.800015 -1.542572 -0.503266 4.558e-03  
## 254 -1.626385 -0.3250551 0.799616 -1.683553 -0.592138 7.788e-01  
## 255 -1.661403 -0.2446601 0.882195 -1.799093 -0.848887 1.017e+00  
## 256 -1.678912 -0.2283405 0.767462 -1.122280 -0.310795 4.193e-01  
## 257 -1.680857 -0.1459251 0.801050 -1.315830 -0.603194 5.596e-01  
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## 263 1.254784 1.3886343 0.948429 -1.907472 2.043389 -2.012e-01  
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## 266 1.186694 1.3032311 0.794292 -1.340402 2.307014 -1.779e-01  
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## 374 0.531087 1.3013522 0.063392 0.903671 -1.096260 -9.218e-01  
## 375 0.554432 1.2371376 0.051704 0.580357 -0.444423 -9.491e-01  
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## 377 0.517469 1.4463924 0.247741 0.352662 -0.148390 -1.102e+00  
## 378 0.482452 1.2061638 -0.254510 0.704034 -0.770916 -4.728e-01  
## 379 0.610850 0.6576774 0.107498 1.186452 -0.279360 3.136e-01  
## 380 0.610850 0.8079598 0.181590 1.136872 -0.312316 3.377e-01  
## 381 0.610850 0.4176001 -0.553105 0.736164 -0.620530 6.424e-01  
## 382 0.610850 0.5378428 -0.268708 0.731074 -0.330527 4.372e-01  
## 383 0.610850 0.4191948 -0.312917 0.759753 -0.448627 7.572e-01  
## 384 0.579723 0.8750002 -0.135457 0.851292 -1.120504 -5.110e-01  
## 385 0.569996 0.7331899 -0.321588 0.632031 -0.363845 -5.420e-01  
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## 392 0.404635 1.5940672 0.179434 0.643803 -0.413945 -7.481e-01  
## 393 0.389071 0.6309439 -0.535591 -0.031201 -1.070103 -8.168e-01  
## 394 0.396853 1.0463671 -0.145047 0.412562 -0.047018 -6.558e-01  
## 395 1.735303 0.1980603 1.967023 1.678556 -2.408448 4.667e-01  
## 396 1.739194 0.5229952 2.236615 2.183381 -2.001281 1.368e+00  
## 397 1.573833 0.3657151 1.849696 2.204203 -2.024060 1.418e+00  
## 398 1.682777 0.7644118 2.151672 2.205047 -1.725719 1.049e+00  
## 399 1.680831 1.2551703 2.327877 2.147327 -1.755923 1.370e+00  
## 400 1.680831 1.8084096 2.649557 1.083010 -0.192872 8.502e-01  
## 401 1.678886 1.5972186 2.929820 1.159021 -0.357162 7.282e-01  
## 402 1.688613 1.4364102 2.743001 1.160483 -0.448673 1.240e+00  
## 403 1.674995 1.2634515 2.526905 1.065916 -1.222824 -2.125e-01  
## 404 1.673050 1.5124437 3.373400 2.396959 -0.940384 9.386e-01  
## 405 1.581615 2.0588531 3.074160 1.790688 -0.209468 8.021e-01  
## 406 1.651650 1.7499297 3.034607 1.854420 -0.951506 1.149e+00  
## 407 1.645814 1.2828670 2.853904 1.733523 -0.734742 9.516e-01  
## 408 1.639978 1.1931815 2.636546 2.686915 -1.963550 1.218e+00  
## 409 1.540761 1.1121224 2.352702 0.542035 -0.660896 -4.047e-02  
## 410 1.616632 0.0211486 1.734094 1.257106 -2.718452 6.211e-01  
## 411 1.575779 0.6462069 2.460668 1.849238 -2.267463 3.781e-01  
## 412 1.503798 0.5400149 1.298069 1.370910 -2.092744 8.992e-01  
## 413 0.791774 1.5166963 1.719391 2.303950 -1.602680 6.900e-01  
## 414 0.793719 1.9985885 2.200351 2.565558 -1.807262 9.469e-03  
## 415 1.348164 1.3905588 1.980084 0.524626 -0.495252 9.394e-01  
## 416 1.153622 0.7911062 1.171518 1.152289 -1.623915 1.442e+00  
## 417 0.927953 1.2266679 1.737471 2.884130 -1.635612 1.161e+00  
## 418 1.095259 0.5328363 0.728109 0.279599 -2.428684 9.467e-01  
## 419 0.861809 0.3037332 0.721782 0.524369 -1.316716 4.832e-01  
## 420 0.581668 1.1323404 -0.100864 1.392174 -1.734915 7.091e-01  
## 421 0.284019 1.4529991 0.538870 0.691901 -1.502183 -4.198e-01  
## 422 1.079696 0.9071891 1.052888 0.054212 0.191053 6.201e-01  
## 423 0.832628 1.4375145 0.922327 1.321429 -1.390696 1.193e-02  
## 424 0.056404 0.9568587 0.042462 1.452543 -0.631441 1.359e+00  
## 425 0.857918 1.3451486 1.161149 1.021165 -0.712021 1.000e+00  
## 426 1.241166 -0.7382869 -0.737036 -0.353637 -0.647462 1.357e+00  
## 427 1.176967 -0.0342619 -0.909418 -1.026259 -0.953051 7.328e-01  
## 428 -0.077830 0.7638567 0.443515 1.315222 0.698895 -2.100e-01  
## 429 1.141950 0.0322619 -1.168999 -0.956648 -0.708037 4.099e-01  
## 430 0.427980 2.2452263 0.894899 -0.965712 1.313578 -2.586e-02  
## 431 0.385181 1.3142788 0.283222 0.923870 -1.572131 3.880e-01  
## 432 0.581668 1.4244146 0.319305 0.376310 -1.402042 2.129e-01  
## 433 0.437707 1.3295765 -0.248349 0.474880 -1.545945 -4.198e-01  
## 435 0.540814 1.3245710 0.522397 1.226236 -1.390072 -1.899e-01  
## 436 0.966862 -0.6468958 -0.957997 -0.625329 -0.639467 1.164e+00  
## 437 0.542760 0.3299498 -1.323372 -0.691530 -0.950264 1.455e-01  
## 438 0.793719 0.1920337 -1.311850 -0.918214 -0.886789 3.882e-01  
## 439 1.248948 -0.0964495 -1.476878 -0.837205 -1.214723 7.184e-01  
## 440 0.583614 1.1111166 0.313625 0.429163 -1.258137 8.846e-01  
## 441 0.521360 0.7575174 -1.326692 -0.918945 -0.562412 -1.281e-01  
## 442 0.499960 1.0429357 0.364629 0.646825 -1.400835 2.510e-01  
## 443 0.657540 0.0990358 -0.754690 -0.711949 -0.228650 2.971e-01  
## 444 0.920172 -0.3785619 -1.012755 -0.856630 -0.749066 7.383e-01  
## 445 0.715902 0.4876176 -0.926255 -0.671224 -0.447156 1.174e-01  
## 446 0.521360 0.8657757 -1.244608 -0.882493 -0.999909 3.155e-01  
## 447 0.892936 0.8442119 -1.774697 -1.192062 -0.948527 -1.144e-01  
## 448 0.569996 -0.5594910 -0.413510 -0.781637 -1.271815 -7.494e-01  
## 449 0.867645 -0.0822597 -1.144353 -0.420933 -0.444799 1.585e-01  
## 450 0.577777 -0.3595912 -0.565114 -0.646623 -0.558912 -6.070e-01  
## 451 0.587504 0.0327023 -0.465691 -0.454712 -0.757841 2.163e-01  
## 452 0.527196 0.0316788 -0.690835 -0.698752 -1.627838 -1.600e+00  
## 453 0.564159 -0.0291938 -0.802020 -0.279708 -0.673354 2.140e-02  
## 454 0.643922 -0.1594321 -1.056454 -0.492297 -0.246455 1.046e-01  
## 455 0.338490 1.6840350 0.519557 0.870231 -0.788627 -1.969e-01  
## 456 0.605013 0.1103444 -1.257475 -0.837231 -0.381843 3.559e-01  
## 457 0.896826 0.3305724 -1.303435 -1.015283 -0.375826 -5.501e-02  
## 458 0.671158 -0.2994957 -1.023130 -0.333206 -0.061305 2.975e-01  
## 459 1.130277 -0.0852260 -1.128444 -0.648177 -0.554088 5.976e-01  
## 460 0.712011 0.5737688 -1.392991 -0.993889 -0.910376 8.372e-01  
## 461 0.725629 0.0802170 -1.148804 -0.467210 -0.078366 5.761e-01  
## 462 0.747029 -0.1815817 -1.053649 -0.595085 -0.267194 4.990e-01  
## 463 0.819010 0.0795644 -1.323921 -0.858585 -0.844833 5.879e-01  
## 464 0.774265 -0.1189052 -0.913728 -0.517972 -0.303985 -1.997e-02  
## 465 0.883209 1.0998837 -1.369337 -1.459709 -0.192258 -1.698e-01  
## 466 0.739247 0.5941848 -1.652505 -0.814611 -0.443219 1.078e-01  
## 467 0.311255 1.6891538 0.635930 0.995623 -0.437649 -5.132e-03  
## 468 0.791774 -0.1128142 -1.168008 -0.687466 -0.329059 2.516e-01  
## 469 0.803446 -0.0347745 -0.549572 -0.682422 -0.297589 1.050e+00  
## 470 0.997988 -0.5369092 -0.545056 -1.162503 -1.020263 4.623e-01  
## 471 0.852082 -0.0189590 -1.077061 -0.787538 -1.080848 1.054e-02  
## 472 0.250947 1.5031786 -0.145089 0.378565 -1.574785 7.409e-03  
## 473 0.764538 -0.1139998 -1.165946 -0.775532 -0.610624 5.121e-01  
## 474 0.198420 1.6395452 0.163376 0.214222 -1.122211 -4.228e-01  
## 475 0.953244 0.1460781 -1.390895 -1.036260 -1.141603 -2.480e-01  
## 476 0.735357 0.1120704 -1.193687 -0.679475 -1.004287 4.639e-01  
## 477 0.937680 -0.0994574 -1.117925 -0.789055 -0.641226 5.743e-01  
## 478 0.869591 0.5969732 -1.222250 -1.438874 -0.379484 2.302e+00  
## 479 0.896826 -0.7761217 -0.693017 -0.826229 -0.866439 8.200e-01  
## 480 1.017443 -0.0826678 -0.494420 -0.714317 -0.757435 -7.715e-01  
## 481 -0.359916 1.3631246 -0.051196 1.996489 -1.563153 -5.583e-01  
## 482 -0.363807 1.3342384 -0.132800 0.972336 -1.589543 -1.162e-01  
## 483 -0.077830 0.1087104 -0.415030 -0.441555 -0.940278 -8.235e-01  
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## 485 0.871536 0.4159202 -1.042120 -0.801466 -0.645404 8.242e-02  
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## 488 0.200366 1.0986635 -0.464320 0.037570 -0.710346 -9.111e-02  
## 489 0.243165 1.3047064 -0.604323 0.328075 -0.763834 -8.152e-01  
## 490 0.929899 0.0342722 -0.988181 -0.929242 -1.009133 1.781e-01  
## 491 0.922117 0.2066143 -1.194210 -0.863823 -0.839626 -3.079e-02  
## 492 0.566105 0.4845046 -1.055690 -0.793654 -0.334080 1.959e-01  
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## 496 -0.140083 1.5536566 0.540348 1.731531 -1.443417 -5.287e-01  
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## 501 0.780101 0.1375954 -1.033539 -0.656954 -0.635379 1.196e-01  
## 502 0.334600 0.7314440 -0.786366 -0.081008 -1.691643 -1.901e+00  
## 503 0.101149 1.6381634 -0.986566 -0.249860 -1.112151 -6.090e-01  
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## 507 0.585559 0.1147811 -1.194064 -0.651869 -0.451598 -2.799e-01  
## 508 0.142003 0.7616435 -0.893379 -0.582526 -0.131416 -6.028e-01  
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## 531 0.583614 -0.1123850 -1.137947 -0.760857 -0.918668 9.475e-02  
## 532 0.278182 0.0402623 -1.367237 -0.848101 -0.823705 2.193e+00  
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## 534 0.247056 -0.1761415 -0.862824 -1.226497 -1.480894 -4.715e-01  
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## 548 0.108931 0.1247803 -0.976042 0.389877 -0.873768 -2.633e-01  
## 549 0.060295 0.2483090 -1.458692 -0.685975 -1.324146 -5.340e-01  
## 550 -0.038921 0.2821638 -1.246926 -0.863135 -0.728131 -6.927e-01  
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## 552 -0.107011 0.3072586 -1.682919 -0.405267 -0.786744 2.666e-01  
## 553 -0.107011 -0.0918079 -1.244034 -0.121685 -0.689187 6.830e-01  
## 554 -0.114793 0.1577604 -1.657162 -0.366681 -0.828596 6.590e-01  
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## 557 -0.013631 0.2849222 -1.308873 -0.378658 -0.591677 -5.412e-01  
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## 560 -0.593366 0.3546372 -1.400747 0.070589 -0.593008 1.816e-01  
## 561 -0.525277 0.4789089 -1.589988 0.433301 -0.374177 -4.790e-01  
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## 564 -0.089502 0.7681993 -1.059927 -0.922638 -1.107602 -5.019e-01  
## 565 -0.089502 -0.0149040 -1.579878 0.091787 -0.503974 -8.404e-01  
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## 567 -0.178992 0.6454911 -1.411876 -0.021359 -0.769561 -7.106e-01  
## 568 -0.038921 0.1787247 -1.446645 -0.654475 -1.247579 -3.933e-01  
## 569 -0.097284 0.0512424 -1.192172 -0.005150 -0.856193 -9.381e-01  
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## 572 -0.315171 -0.2043597 -1.054421 -0.049269 -0.099894 -4.898e-01  
## 573 -0.301553 -0.0444055 -1.452446 0.514901 -0.255288 -7.351e-01  
## 574 -0.182882 0.2590161 -1.707046 -0.064803 -0.294485 -1.318e+00  
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## 581 -0.356025 0.4195810 -1.535118 0.080400 -0.365992 -6.121e-01  
## 582 -0.354080 0.4747055 -1.737972 0.399303 -1.447893 -2.747e+00  
## 583 -0.346298 0.7977066 -1.532440 -0.201284 -0.961225 -1.123e+00  
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## 586 0.336545 1.4112665 -0.852870 -0.063625 0.046346 -1.862e-01  
## 587 0.476615 0.8897629 -0.199103 0.837273 -0.090941 3.291e-02  
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## 593 0.881263 0.1986400 -0.629184 -0.141113 -0.495516 5.113e-01  
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## 596 0.219820 0.3861875 -0.018057 0.810877 0.342382 2.155e-01  
## 597 0.803446 0.0474714 0.063058 0.522610 -0.204038 4.710e-01  
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## 599 0.241219 0.4847507 -0.040504 0.051610 0.104396 9.820e-01  
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## 607 0.365726 0.0268331 0.023965 0.323541 0.370734 1.894e-01  
## 608 0.258728 0.2349590 0.074278 0.581790 0.446724 2.566e-01  
## 609 0.250947 0.3415627 -0.301527 1.065751 0.203110 -8.716e-03  
## 610 0.601122 -0.1742596 -0.045099 0.371416 0.374481 -1.638e-01  
## 611 0.490233 0.1137429 -0.404167 0.566756 -0.079798 7.246e-02  
## 612 0.577777 -0.2003560 0.212283 0.581770 1.143621 1.499e-01  
## 613 0.468834 -0.2674262 -0.474429 0.296356 0.160239 9.531e-01  
## 614 0.468834 -0.0984048 -0.032052 -0.698624 0.497891 3.291e-01  
## 615 0.511633 0.1025261 -0.560930 0.833288 0.133092 4.202e-01  
## 616 0.278182 0.3592518 -0.667461 0.595805 0.002525 2.478e-01  
## 617 0.355999 -0.2208633 0.127293 0.225889 0.600022 8.002e-01  
## 618 0.311255 0.4367563 0.364376 2.010330 -0.178190 -3.051e-01  
## 619 0.297637 0.3001778 1.263893 0.750403 0.468613 5.229e-01  
## 620 0.249001 0.7568571 -0.624515 0.439874 -0.601853 -9.943e-01  
## 621 0.326818 0.3031098 0.199843 0.992115 -0.720360 -1.341e+00  
## 622 0.307364 0.4711950 0.617790 1.547580 -0.392584 -4.908e-01  
## 623 0.307364 -0.0177507 -0.070059 1.161889 0.056956 -5.427e-02  
## 624 0.309309 0.0716475 0.114004 1.111191 -0.032595 2.802e-02  
## 625 0.299582 0.6684430 0.159582 1.362423 -0.343073 -2.031e-01  
## 626 0.297637 0.2418814 0.379799 1.152880 -0.054016 -1.822e-01  
## 627 0.239274 0.8121910 -0.743379 0.344635 0.134879 -1.114e+00  
## 628 0.190638 0.8792058 -0.647642 0.438943 -0.040783 -4.632e-01  
## 629 0.243165 0.3274189 -0.426580 0.489069 0.157570 -2.678e-01  
## 630 0.239274 0.4334051 -0.803629 0.504820 0.210065 1.306e-01  
## 631 0.237329 0.4669625 -0.582344 0.803591 0.271491 -9.078e-02  
## 632 0.200366 0.3702746 -0.022362 0.667504 0.259962 -1.883e+00  
## 633 0.190638 0.2038414 -0.094710 1.511084 -0.056581 -7.469e-01  
## 634 0.184802 0.3823006 -0.370795 0.778543 0.131927 -3.493e-01  
## 635 0.229547 0.2423290 -0.553948 0.688047 0.332964 -6.503e-01  
## 636 0.198420 0.6900568 -0.784252 0.546863 -0.430960 -9.642e-01  
## 637 0.322927 0.7324465 -0.529209 0.085245 0.766299 -3.635e-01  
## 638 0.221765 0.5244580 -0.646613 0.472418 0.473992 -6.344e-01  
## 639 0.180911 0.4181698 -0.940535 0.411368 0.335103 -5.981e-02  
## 640 0.161457 0.2919089 -0.469061 0.992550 0.026502 -1.010e-02  
## 641 0.229547 0.2806022 -0.520824 0.800837 0.183475 1.897e-01  
## 642 0.177021 0.1429306 -0.632191 0.824915 0.292690 -7.859e-01  
## 643 0.180911 0.4933116 -0.622823 0.690199 0.307717 -7.717e-01  
## 644 0.173130 0.2153947 -0.610013 0.912182 0.056643 -9.079e-01  
## 645 0.159512 0.1746459 -0.154064 1.184447 0.211831 -6.491e-01  
## 646 0.151730 0.0244381 -0.291717 1.021108 0.008105 -1.147e+00  
## 647 0.151730 0.0445361 -0.409378 0.618824 -0.025126 -6.065e-01  
## 648 0.136167 0.5056947 -0.746115 0.654042 -0.149029 -9.992e-01  
## 649 0.239274 0.0280587 -0.359456 1.014674 0.502996 -7.630e-01  
## 650 0.095313 0.1897699 -0.169890 1.222778 -0.539408 -7.748e-01  
## 651 0.095313 -0.0676269 -0.710155 0.694847 0.231707 -7.825e-01  
## 652 0.095313 0.3743231 -0.658938 0.709388 0.290520 -2.401e-01  
## 653 0.276237 0.4214055 0.287689 1.588515 0.103180 1.789e-01  
## 654 0.122549 0.1519117 -0.547212 0.869237 0.073833 -8.581e-01  
## 655 0.112822 0.0946458 -0.528974 1.360669 0.735906 -5.264e-01  
## 656 0.122549 0.0359634 -0.356638 0.879467 0.488294 -5.091e-01  
## 657 0.210093 -0.3993830 -0.304262 0.861143 0.967531 -1.860e-01  
## 658 0.215929 0.0786630 -0.396228 1.001877 0.231428 -4.244e-01  
## 659 -0.820981 -0.0922559 0.301141 1.110551 0.136873 8.848e-02  
## 660 0.558323 -1.0125634 -0.722300 0.097534 0.121733 5.539e-01  
## 661 0.445489 -1.5715052 0.078225 0.623941 1.136911 8.307e-01  
## 662 0.441598 -1.6521086 0.210043 0.581517 1.482275 1.148e+00  
## 663 0.538869 -1.4828153 -0.288978 0.347966 0.928595 1.216e+00  
## 664 0.441598 -1.2484824 -1.018087 0.824169 0.956986 7.364e-01  
## 665 0.433816 -1.6618236 -0.011137 0.536157 1.190585 1.336e+00  
## 666 0.420198 -1.2696673 0.174811 -0.652535 -0.759185 3.103e-01  
## 667 0.429925 -1.5292952 -0.200987 0.199407 0.840889 9.703e-01  
## 668 0.453270 -1.3577823 -0.200695 0.575273 0.998892 1.080e+00  
## 669 0.439652 -1.2977279 -0.211013 0.691372 1.171405 9.581e-01  
## 670 0.210093 -1.1032289 -0.699800 -0.095179 -0.137757 1.005e+00  
## 671 0.161457 -0.4380326 -0.920514 -0.258590 -0.289746 2.288e-01  
## 672 0.336545 -0.8416263 -0.927034 0.038914 0.278097 6.798e-01  
## 673 0.326818 -0.7480273 -0.801128 0.096327 0.082114 5.084e-01  
## 674 0.132276 -0.4088668 -1.138035 -0.415347 -0.472267 5.905e-01  
## 675 0.190638 -0.9617018 -0.673175 -0.546281 -1.019737 3.961e-01  
## 676 0.285964 -1.3568595 -0.476806 0.510993 0.934660 1.290e+00  
## 677 0.068077 -0.1362638 -1.569069 0.132457 -0.556523 9.324e-02  
## 678 -0.480532 0.2578181 -1.504693 0.487188 -0.749640 -1.011e+00  
## 679 0.258728 -0.7067692 -1.044332 0.299710 0.484083 5.520e-01  
## 680 0.177021 -1.2990010 -0.576937 0.623749 1.108365 6.499e-01  
## 681 0.171184 -1.1893387 -0.424295 0.935123 1.831869 1.710e-01  
## 682 -0.622548 0.3838594 -1.908553 0.494948 -0.088641 -3.108e-01  
## 683 -0.457187 0.3273342 -1.864232 0.319096 -0.168767 -2.207e-02  
## 684 -0.501932 -0.1513003 -0.970262 -0.008609 -1.020588 -2.096e+00  
## 685 -0.330735 -0.1059986 -1.669689 0.530677 -0.292299 4.690e-01  
## 686 -0.334625 -0.4646061 -0.774281 0.632775 0.619917 -1.257e-01  
## 687 -0.192610 -0.4536948 -1.201777 0.318483 0.512180 1.453e-01  
## 688 0.159512 -1.5799870 -0.080504 0.088490 0.553957 1.162e+00  
## 689 0.073913 -1.4176812 -0.466238 -0.126403 -0.091718 -8.687e-01  
## 690 0.056404 -0.8526590 -0.395948 -0.228568 0.405183 3.258e-01  
## 691 -0.554458 0.0534929 -1.505202 0.386612 0.198322 4.845e-02  
## 692 -0.820981 -0.1283760 -1.286455 0.547966 0.479617 1.133e-01  
## 694 0.023332 -1.1448988 -0.526240 0.538671 1.021816 5.085e-01  
## 695 -0.445514 0.1672371 -1.462213 -0.289077 -0.669280 -1.077e+00  
## 696 -0.433842 -0.2192817 -1.511512 0.286329 -0.562748 -5.257e-01  
## 697 -0.071993 -0.5768475 -0.972512 0.319429 0.042539 6.406e-01  
## 698 -0.626439 -0.0701908 -1.375944 0.654389 0.684389 -4.076e-01  
## 699 -0.159537 -1.1098824 -0.653400 -0.060814 0.498115 -1.158e+00  
## 700 -0.367698 -0.4950683 -0.816718 0.229057 0.092830 -8.362e-01  
## 701 -0.268481 -0.3941342 -0.807629 0.106246 0.315241 2.665e-01  
## 702 -0.665347 0.4026760 -1.713593 0.011449 0.617743 -3.597e-01  
## 703 -0.669238 0.3252070 -1.549294 0.070655 0.905604 -4.947e-01  
## 704 -0.435787 -0.5793199 -0.887882 0.719619 0.805064 -8.710e-02  
## 705 -0.692583 0.3495411 -1.567102 0.125360 -0.251308 3.269e-02  
## 706 -0.389097 -0.3441929 -0.796078 -0.257799 0.380582 7.012e-01  
## 707 -0.581694 -0.2785240 -0.775379 -0.270089 -0.121435 -6.096e-01  
## 708 -0.719819 0.0438663 -1.883624 0.091099 -1.461899 -3.314e+00  
## 709 -0.743164 0.3179569 -1.652827 -0.066334 0.059911 -7.381e-01  
## 710 -0.538895 -0.2478292 -0.676509 0.087944 -0.262051 -1.744e+00  
## 711 -0.315171 -0.3936325 -1.007658 0.426513 0.146179 2.342e-01  
## 712 -0.363807 -0.7077745 -0.597873 0.293426 0.807007 2.088e-01  
## 713 -0.472750 -0.6627171 -0.628534 0.179497 0.415350 -1.087e-01  
## 714 -0.402715 -0.8164816 -1.077503 0.513547 0.850190 -2.389e-01  
## 715 -0.356025 -0.8681867 -1.018346 0.831045 1.383939 -2.411e-01  
## 716 -0.447460 -0.2890520 -0.895094 0.406540 0.405353 -1.932e-01  
## 717 -0.830708 0.1354732 -1.796579 0.420930 -0.295179 -1.591e+00  
## 718 -0.348243 -0.8100841 -1.042290 0.818523 1.215486 -2.589e-01  
## 719 -0.313226 -0.9783148 -0.504993 0.549770 1.278494 -7.205e-01  
## 720 -0.357970 -1.0057984 -0.435403 0.004719 0.626366 2.360e-01  
## 721 -0.280154 -0.7828573 -1.047054 0.736992 0.840076 5.247e-01  
## 722 -0.443569 -0.9986607 -0.754827 0.086287 0.200161 -1.283e+00  
## 723 -0.379370 -0.5333118 -1.109022 0.714514 0.367348 5.837e-01  
## 724 -0.332680 -0.7160420 -0.754501 0.858854 0.844471 2.806e-01  
## 725 -1.180884 -0.5500178 -0.686569 0.942637 1.689612 4.620e-02  
## 726 -1.171157 -0.6404838 -0.668426 0.584327 1.266484 -1.111e+00  
## 727 -1.106958 -0.4224669 -0.942065 0.786388 1.244207 -6.459e-01  
## 728 -0.540840 -0.7878939 -0.674873 0.415664 0.375264 1.974e-01  
## 729 -0.305444 -0.9819536 -0.850939 0.808975 1.430213 8.316e-02  
## 730 -0.326844 -1.0416815 -0.799692 0.474806 1.007981 1.246e+00  
## 731 -0.490259 -1.0636993 0.136716 -0.167363 0.669482 1.245e+00  
## 732 -0.490259 -0.7277128 -0.224582 0.105015 0.230821 1.315e+00  
## 733 -0.328789 -1.0473409 -0.371052 0.207531 0.604300 9.033e-01  
## 734 -0.505822 -0.8617034 -0.442676 0.093852 0.544130 7.479e-01  
## 735 -0.538895 -0.9169147 -0.503990 0.269735 0.735120 7.121e-01  
## 736 1.628305 -1.9309708 -0.330776 -0.635496 -0.779867 4.665e+00  
## 737 1.665268 -1.3293428 -0.508911 -0.977587 -1.163540 3.199e+00  
## 738 1.608851 -1.9045742 0.210919 -0.320108 -0.129171 2.043e+00  
## 739 1.657486 -1.2875607 -0.504592 -0.444064 -0.557235 1.435e+00  
## 740 1.480453 -1.5739629 -0.174936 -0.511533 -1.038631 1.527e+00  
## 741 1.727522 -1.6463160 -0.222244 -0.624685 -1.062667 8.042e-01  
## 742 1.548543 -1.2234705 -0.538862 -0.692897 -0.903195 1.464e+00  
## 743 1.266457 -1.1455173 -0.999673 -0.190170 -1.136841 3.554e+00  
## 744 1.447381 -1.1808450 -0.342550 -0.900655 -1.281753 1.405e+00  
## 745 1.229494 -0.7819143 -0.885975 -0.228670 -1.289749 2.221e+00  
## 746 1.406527 -2.0500949 0.308459 -0.807305 -0.401236 1.626e+00  
## 747 1.320928 -0.6039868 -1.032660 -0.578888 -1.204152 1.418e+00  
## 748 1.361782 -1.8988373 0.101129 -0.169119 0.134546 1.348e+00  
## 749 1.503798 -1.1646849 -0.315601 -0.300304 -0.339099 1.320e+00  
## 750 1.383182 -2.1945024 0.567857 -0.580319 -0.073390 2.126e+00  
## 751 1.377346 -2.1272698 0.808079 -1.179418 -0.580172 1.401e+00  
## 752 1.283965 -1.9885387 -0.048749 -0.624578 -0.252907 3.273e+00  
## 753 1.297583 -2.2910716 0.027928 -1.160701 -0.798928 4.025e+00  
## 754 1.309256 -2.2054592 0.528152 -0.927648 -0.381241 1.765e+00  
## 755 1.245057 -2.0085285 0.034473 0.090856 0.639796 2.035e+00  
## 756 1.186694 -1.8970223 -0.181846 -0.210297 0.061153 1.343e+00  
## 757 1.227548 -1.1711614 -0.822617 -0.379405 -1.012837 1.782e+00  
## 758 1.237275 -1.9718047 0.344479 -0.685786 -0.657153 9.763e-01  
## 759 1.147786 -1.1623498 -0.559964 -0.764368 -1.477758 2.008e+00  
## 760 1.163349 -1.7406545 0.009636 -0.160471 0.250752 1.706e+00  
## 761 1.134168 -1.8780938 -0.492765 0.191392 0.809162 1.035e+00  
## 762 1.062187 -1.3149908 -0.785189 -0.636679 -0.275203 2.396e+00  
## 763 1.097205 -1.3519230 -0.636376 -0.355631 -0.325130 2.737e+00  
## 764 1.066078 -1.4137573 -0.291914 -0.863136 -0.712480 1.774e+00  
## 765 1.104987 -1.2802827 -0.126965 -0.681681 -0.537953 3.125e-01  
## 766 0.933790 -0.7962255 -0.412723 -0.958292 -1.330079 1.920e+00  
## 767 -0.396879 0.7077229 -1.159756 0.491358 -0.381209 -2.135e-01  
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## 769 -0.445514 1.0747109 -0.894432 0.345880 -0.762168 2.422e-01  
## 770 -0.342407 0.3720609 -1.617789 -0.080944 -0.511768 -2.259e-01  
## 771 -0.624493 -0.4724563 -0.923756 -0.269648 0.048999 -5.272e-02  
## 772 -0.402715 0.6402990 -1.230031 0.043813 -0.447205 -4.209e-01  
## 773 -0.392988 -0.1388563 -1.239569 -0.301629 -1.162979 8.463e-01  
## 774 -0.661456 -0.2350140 -0.995183 0.290539 0.310522 2.222e-01  
## 775 -0.404661 0.6741963 -1.431869 0.044063 -0.181906 -7.511e-01  
## 776 -0.490259 0.8989531 -1.446437 0.305310 -0.469424 -6.739e-01  
## 777 -0.392988 0.6329448 -1.355816 0.174389 -0.549981 3.450e-01  
## 778 -0.490259 0.6400811 -1.418919 0.146597 -0.082732 -4.037e-01  
## 779 -0.505822 0.8384823 -1.518875 -0.012948 -0.541530 -2.966e-01  
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## 782 -0.480532 0.4557560 -1.422560 0.547978 -0.265927 -1.964e-01  
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## 784 -0.480532 0.2894291 -1.460662 0.634639 -0.138628 -5.340e-01  
## 785 -0.488314 0.3797312 -1.552082 0.210491 -0.024896 -1.519e-01  
## 786 -0.494150 0.7316910 -1.269530 0.713851 -0.792601 -9.364e-02  
## 787 -0.490259 0.6685714 -1.795163 0.464204 -1.569190 -1.377e+00  
## 788 -0.490259 0.1221435 -1.589323 0.523000 0.004536 -3.336e-01  
## 789 -0.706201 0.0905213 -0.218018 -0.132527 -0.322962 1.272e+00  
## 790 -0.733437 0.1640070 -0.257088 -0.174355 -0.786661 -3.164e-01  
## 791 -0.754836 0.3041754 -0.766107 0.240898 -0.393783 -4.348e-01  
## 792 -0.503877 0.2584611 -2.107220 0.726961 -0.276217 -1.155e+00  
## 793 -0.492205 -0.0884326 -1.148569 0.119233 -0.194461 7.027e-02  
## 794 -0.723710 0.1960504 -0.489171 0.208446 -0.562649 -5.439e-01  
## 795 -0.762618 0.1161434 -0.644590 -0.025685 -0.007440 -3.169e-01  
## 796 -0.739273 0.2843507 -0.136925 0.195796 -0.362706 1.601e-01  
## 797 -0.752891 0.4005893 -0.773040 0.477121 -0.053248 -1.091e-01  
## 798 -0.745109 0.2286351 -0.479394 0.056309 -0.526404 -5.105e-02  
## 799 -0.791799 0.1041063 -0.214587 -0.119478 -0.358212 6.115e-01  
## 800 -0.762618 0.1373227 -0.156630 -0.637967 -0.864657 2.746e-01  
## 801 -0.813199 0.2896574 -0.569654 0.307628 0.218504 -2.868e-02  
## 802 -0.774291 0.4545164 -0.546740 -0.003605 -0.124953 3.144e-01  
## 803 -0.521386 -0.0954673 -0.857142 0.450227 -0.277415 2.868e-01  
## 804 -0.782072 0.0872765 -0.475085 0.436593 -0.093844 -1.399e-01  
## 805 -0.733437 0.0009151 -0.314941 -0.059723 -0.260260 1.601e-01  
## 806 -0.743164 -0.2686471 -0.085553 -0.397638 -0.230678 4.920e-01  
## 807 -0.527222 0.0514784 -1.093618 0.540964 -0.045461 1.938e-01  
## 808 -0.498041 0.5486009 -1.531625 0.418837 -0.098516 -5.689e-01  
## 809 -0.507768 -0.0937084 -1.114912 -0.341850 0.318149 -3.902e-01  
## 810 -0.519440 -0.0694372 -1.163289 0.478148 -0.156033 -9.848e-02  
## 811 -0.519440 -0.0472973 -1.082223 0.698164 0.518653 1.241e-01  
## 812 -0.519440 0.1945765 -1.080668 0.290701 0.623762 -2.747e-01  
## 813 -0.529168 -0.1353216 -0.764547 0.322822 -0.008460 -1.047e-01  
## 814 -0.529168 0.1622871 -1.081030 0.878827 0.238081 -5.014e-01  
## 815 -0.531113 0.1785083 -1.434852 0.939668 0.283480 -6.360e-01  
## 816 -0.544731 -0.3188049 -0.970717 0.589320 0.698715 6.418e-02  
## 817 -0.529168 0.0112572 -0.787786 0.444458 0.085853 -9.013e-02  
## 818 -0.531113 -0.0722921 -1.224506 0.499582 -0.326303 -4.583e-01  
## 819 -0.550567 0.0376874 -0.885575 0.501234 0.055180 -2.689e-01  
## 820 -0.618657 -0.0802544 -0.637668 0.458636 0.100237 -1.041e-02  
## 821 -0.558349 0.4086454 -0.938755 1.161651 0.362903 -5.005e-01  
## 822 -0.556403 -0.1809040 -0.770222 1.077699 0.678488 -4.237e-01  
## 823 -0.560294 -0.3208228 -0.913662 1.152189 0.882660 -5.133e-01  
## 824 -0.585585 -0.1623458 -0.684230 0.340736 0.547479 -1.171e-01  
## 825 -0.577803 -0.2980511 -0.633484 0.449566 0.089250 -8.518e-02  
## 826 -0.889071 -0.1249857 -0.716569 0.005772 -0.252631 -2.207e-01  
## 827 -0.587530 0.0311257 -0.989669 0.941151 0.602058 -3.322e-01  
## 828 -0.599203 0.0675488 -0.837828 0.745754 -0.124461 -3.061e-01  
## 829 -0.601148 -0.1818540 -0.141981 1.098659 0.248494 2.660e-01  
## 830 -0.593366 0.2597588 -1.229181 0.719943 -0.056474 -2.494e-01  
## 831 -0.661456 -0.1286615 -0.793117 0.872871 0.857115 -4.036e-03  
##   
##   
## Biplot scores for constraining variables  
##   
## CCA1 CA1 CA2 CA3 CA4 CA5  
## arctic.env$tave 1 0 0 0 0 0

summary(arctic\_pollen\_cca\_tmin)

##   
## Call:  
## cca(formula = arctic\_pollen\_sqrt ~ arctic.env$tmin)   
##   
## Partitioning of scaled Chi-square:  
## Inertia Proportion  
## Total 1.14094 1.0000  
## Constrained 0.03753 0.0329  
## Unconstrained 1.10340 0.9671  
##   
## Eigenvalues, and their contribution to the scaled Chi-square   
##   
## Importance of components:  
## CCA1 CA1 CA2 CA3 CA4 CA5  
## Eigenvalue 0.03753 0.2435 0.1348 0.06629 0.04657 0.03796  
## Proportion Explained 0.03290 0.2134 0.1182 0.05810 0.04081 0.03327  
## Cumulative Proportion 0.03290 0.2463 0.3644 0.42255 0.46336 0.49663  
## CA6 CA7 CA8 CA9 CA10 CA11  
## Eigenvalue 0.03694 0.03355 0.03299 0.02860 0.02816 0.02608  
## Proportion Explained 0.03238 0.02940 0.02892 0.02506 0.02468 0.02286  
## Cumulative Proportion 0.52901 0.55841 0.58733 0.61240 0.63707 0.65994  
## CA12 CA13 CA14 CA15 CA16 CA17  
## Eigenvalue 0.02509 0.02339 0.02246 0.02088 0.02027 0.01894  
## Proportion Explained 0.02199 0.02050 0.01969 0.01831 0.01777 0.01660  
## Cumulative Proportion 0.68192 0.70242 0.72211 0.74041 0.75818 0.77478  
## CA18 CA19 CA20 CA21 CA22 CA23  
## Eigenvalue 0.01854 0.01800 0.01721 0.01609 0.01584 0.01457  
## Proportion Explained 0.01625 0.01578 0.01508 0.01411 0.01388 0.01277  
## Cumulative Proportion 0.79103 0.80680 0.82188 0.83599 0.84987 0.86264  
## CA24 CA25 CA26 CA27 CA28 CA29  
## Eigenvalue 0.01369 0.01296 0.01285 0.01252 0.01158 0.011311  
## Proportion Explained 0.01200 0.01136 0.01126 0.01097 0.01015 0.009914  
## Cumulative Proportion 0.87464 0.88600 0.89726 0.90824 0.91839 0.928299  
## CA30 CA31 CA32 CA33 CA34  
## Eigenvalue 0.010854 0.010533 0.010087 0.009837 0.009288  
## Proportion Explained 0.009513 0.009232 0.008841 0.008622 0.008141  
## Cumulative Proportion 0.937812 0.947044 0.955885 0.964507 0.972648  
## CA35 CA36 CA37 CA38  
## Eigenvalue 0.008369 0.008206 0.007512 0.007119  
## Proportion Explained 0.007336 0.007193 0.006584 0.006240  
## Cumulative Proportion 0.979984 0.987176 0.993760 1.000000  
##   
## Accumulated constrained eigenvalues  
## Importance of components:  
## CCA1  
## Eigenvalue 0.03753  
## Proportion Explained 1.00000  
## Cumulative Proportion 1.00000  
##   
## Scaling 2 for species and site scores  
## \* Species are scaled proportional to eigenvalues  
## \* Sites are unscaled: weighted dispersion equal on all dimensions  
##   
##   
## Species scores  
##   
## CCA1 CA1 CA2 CA3 CA4 CA5  
## F.PABI -0.58010 1.72507 1.120273 -1.183155 1.004746 -0.937159  
## F.BALN 0.17141 0.20545 -0.263686 -0.068248 -0.051098 0.103929  
## F.CAMB -0.23589 0.47221 0.576442 0.546877 0.115318 0.002561  
## F.APIA -0.70260 -0.40512 -0.763859 -0.074596 -1.143011 -1.518239  
## F.CART 0.08590 -0.11205 0.096241 0.263017 0.043465 -0.030027  
## F.TULI -0.06417 -0.08498 -0.084616 0.195940 0.070191 -0.269057  
## F.BBET 0.01492 0.16326 -0.276998 -0.034036 -0.061457 0.057375  
## F.BRAS 0.11737 -0.99779 0.797244 -0.643774 -0.008622 0.026064  
## F.CARY -0.21956 -0.89208 0.454591 -0.130481 0.103767 0.058577  
## F.CHEN 0.08002 0.31196 0.713056 0.824512 -0.294299 -0.123559  
## F.BCOR -0.36844 0.45448 1.026822 1.197361 -0.610548 -0.481827  
## F.CUPR -0.15802 0.31836 -0.306776 0.224405 -1.050810 0.201272  
## F.CYPE -0.09458 -0.30158 -0.159498 0.101267 0.170519 -0.082006  
## F.RDRY 0.17777 -1.26757 1.051028 -0.382576 0.118743 0.359378  
## F.ELAE 0.59898 0.15362 -0.751809 -0.098231 -0.688818 0.587901  
## F.ERIC -0.40904 -0.26175 -0.263687 0.323675 0.285198 0.116850  
## F.FABA -0.06642 -0.66565 0.233948 0.298488 0.581853 0.280463  
## F.FFAG -0.58199 1.69610 0.994057 -1.043827 0.294286 -1.652945  
## F.OFRA -0.20488 0.88116 1.057898 0.676315 0.004815 -0.783340  
## F.PLAR 0.03419 1.19383 0.608683 0.055196 0.063496 -0.114693  
## F.MMYR 0.46582 0.69493 0.115104 0.139981 -0.571323 0.323425  
## F.ONAG -0.16439 -0.19563 0.040183 0.158374 0.429232 0.165465  
## F.POXR -0.09581 -1.10026 0.813104 -0.403710 -0.234542 0.160566  
## F.PAPA 0.39590 -1.62001 1.542698 -0.571580 -0.271813 0.069970  
## F.PPIC 0.20457 0.62704 0.123884 -0.253654 0.018934 0.049204  
## F.PPIN 0.15120 0.41182 0.802929 0.517852 -0.069197 0.061635  
## F.PPLA 0.05033 -0.66602 0.755644 -0.648801 -0.728412 0.199862  
## F.POAC -0.18822 -0.40695 -0.188898 -0.007607 -0.012291 -0.254911  
## F.POLE 0.17717 -0.20606 -1.271448 -0.269660 0.008821 -3.572804  
## F.POLY -0.13159 -0.81453 0.062885 0.294885 0.478934 -0.402870  
## F.SPOP 0.41307 0.31108 -0.454303 -0.204191 -0.261017 0.235929  
## F.FQUE -0.15052 1.27498 1.149859 0.747132 -0.462394 -0.712816  
## F.RANU -0.16167 -0.79247 0.050657 -0.194859 -0.420988 -0.456800  
## F.ROSA 0.06199 -0.51735 -0.006541 -0.078251 0.101891 -0.104849  
## F.SSAL -0.14100 -0.47891 0.010920 0.015686 -0.087080 0.092155  
## F.SAXI 0.11325 -1.17466 0.889070 -0.384440 0.070303 0.242637  
## F.SCRO -0.06132 -1.13731 0.353383 -0.210807 0.078172 0.058785  
## F.RTHA -1.18955 -0.44382 -0.170465 -0.239823 -2.176870 -0.770993  
## F.ULMA -0.13768 1.16208 1.020486 1.138132 -0.833655 -0.983342  
##   
##   
## Site scores (weighted averages of species scores)  
##   
## CCA1 CA1 CA2 CA3 CA4 CA5  
## 1 0.447993 0.2301791 0.7508326 1.326242 0.056421 0.7022763  
## 2 -1.468718 -0.1668213 0.9341445 1.007864 1.601853 -0.6745184  
## 3 -0.575924 -0.1658794 1.2065087 1.487660 0.809143 -0.5050452  
## 4 -1.048904 0.5035281 0.9209580 1.028159 1.574043 -0.5007007  
## 5 -0.766304 0.0395522 0.6750248 1.549459 0.720461 0.5770905  
## 6 -0.876085 -0.1224180 1.1446838 2.115653 0.572892 -0.2974477  
## 7 -1.328155 0.0166295 0.4677143 1.183971 1.441230 0.5219365  
## 8 -0.490411 -0.5563512 0.9467858 1.017996 0.679730 0.7468724  
## 9 -1.028786 -0.1386093 0.3128547 1.647596 0.929406 0.3092164  
## 10 -1.411023 -0.4540532 0.3441691 0.941174 0.662577 0.9744302  
## 11 -1.331192 -0.7715533 0.8802212 1.367370 0.603242 -0.0006599  
## 12 -0.784693 -0.4374148 0.8626237 1.730369 1.223291 -0.0031247  
## 13 -0.948830 -0.5874703 1.4967768 1.805918 -0.165274 -0.1711254  
## 14 -2.281107 -0.6300014 -0.0164760 1.226414 1.000667 1.1819051  
## 15 -1.546951 -0.2379971 0.2604722 1.866301 0.899918 0.1886043  
## 16 -1.357007 -0.5472612 0.8707547 1.554322 0.952591 -0.5599887  
## 17 -0.528762 -1.1779561 1.3035635 0.657444 0.684473 0.7572411  
## 18 -1.146542 -0.1042838 1.1358710 0.323401 1.049139 -0.0939187  
## 19 -0.980434 -0.2020322 0.3682677 1.406708 0.377379 0.0002960  
## 20 -1.663651 -0.8994501 0.9373968 0.720736 0.716155 0.3252739  
## 21 -1.424646 -0.3890275 0.3089569 1.205962 0.705010 0.6842110  
## 22 -0.907264 -0.5190538 0.8067318 0.897011 0.559214 0.9726752  
## 23 -2.021102 -1.1031431 0.3228712 0.108639 0.760810 0.5521459  
## 24 -2.863597 -0.7270844 -0.2164381 1.548891 1.573361 0.7381714  
## 25 -2.970269 -0.9654060 -0.1658720 1.065849 1.167386 -0.1613543  
## 26 -1.625911 -0.4793632 0.2996168 1.922681 1.641343 0.3004667  
## 27 -3.091461 -1.0852116 -0.0784295 0.851958 0.970965 0.4586078  
## 28 -2.122633 -0.7930420 0.2796747 1.376384 0.174497 -0.5440706  
## 29 -1.192186 -0.6181017 0.7854170 1.080449 0.558248 0.2247800  
## 30 -1.919391 -0.5556778 0.2121434 1.491847 1.617501 0.2793369  
## 31 -2.271044 -0.6337552 -0.4286489 0.936470 0.690479 -0.3764655  
## 32 -2.517076 -0.8569775 0.3583212 1.237327 0.949814 0.4599673  
## 33 -2.454152 -0.9180357 0.1748633 1.198898 1.479344 0.5325693  
## 34 -1.154543 -0.5007671 0.6842951 1.470574 1.240016 0.8127738  
## 35 -1.533553 -0.8200774 0.4002051 1.367760 1.084410 -0.1091693  
## 36 -2.631933 -1.1559328 0.2149613 0.800594 1.147172 0.4201853  
## 37 -1.995781 -1.0684403 1.1564075 1.256714 0.534810 -1.3848668  
## 38 -1.554660 -0.6173927 -0.5066133 0.681232 0.291913 0.2684695  
## 39 -1.996944 -0.7465459 -0.2855281 0.837016 0.469476 0.6935076  
## 40 -2.826627 -0.9335494 -0.5490157 0.540260 1.094294 0.8313306  
## 41 -2.117596 -0.2198677 -0.0768710 2.392682 1.480389 0.5152071  
## 42 -2.947736 -1.3997159 0.3432977 0.533430 1.119632 1.0289854  
## 43 -2.840959 -1.2191909 0.3038222 0.453151 0.856880 0.4578415  
## 44 -2.794823 -1.0577161 0.4377613 0.749508 0.660417 0.9364140  
## 45 -2.592697 -1.3050256 0.7595553 0.647309 1.011148 0.8197802  
## 46 -2.580317 -1.7960108 0.5560281 -0.530693 1.214330 1.0489655  
## 47 -2.432171 -1.8031219 0.4891448 -0.285261 1.136352 0.4320251  
## 48 -2.557728 -1.6691247 0.7623476 0.246709 0.989124 1.0005520  
## 49 -2.070859 -0.4241435 0.8128087 1.252852 1.544273 -0.7319220  
## 50 -2.146649 -1.1449464 0.9330526 0.979743 0.725565 1.1627645  
## 51 -1.296598 -1.7526507 1.0923633 0.108357 1.329344 1.2939131  
## 52 -2.068269 -1.8600231 1.0193426 -0.258719 0.942034 0.3209533  
## 53 -2.401947 -1.7920320 1.4278605 0.183228 0.978073 0.9363233  
## 54 -2.605784 -1.3920004 0.1475745 0.113177 1.448362 1.0738686  
## 55 -2.394391 -1.6112779 1.2145003 0.436210 0.730539 0.8749537  
## 56 -2.278908 -1.5481797 0.9127183 0.455238 1.373808 0.8639336  
## 57 -4.643446 -1.4977318 -0.1913970 1.344158 2.302584 0.9100564  
## 58 -2.297959 -1.7124209 0.9629215 1.107031 2.530584 0.9092191  
## 59 -1.490632 -1.5989833 1.3446685 0.336119 0.931179 0.9117581  
## 60 -0.872908 -1.0356547 1.5852091 1.658068 1.246176 0.4100228  
## 61 -1.530012 -1.3580591 0.9584553 0.258140 0.712645 1.1114046  
## 62 -1.155643 -1.3111328 1.1413024 0.357277 1.354684 0.9910754  
## 63 -1.001560 -1.3253851 1.1950618 0.709926 1.112293 0.3826009  
## 64 -1.968285 -2.1427777 1.3406358 -0.714006 0.088973 0.8275382  
## 65 -1.666745 -1.9760701 1.1756078 -0.584390 0.927043 1.1075052  
## 66 -0.700180 -1.1005089 1.0351328 0.822936 0.695330 0.6472775  
## 67 -1.550823 -1.8323558 1.0223000 -0.312475 0.708020 0.6962846  
## 68 -2.580563 -1.4434578 0.6873630 0.852929 1.229542 0.3762009  
## 69 -1.063232 -1.7640386 1.9118558 0.218537 0.444707 0.8735927  
## 70 0.232407 -0.8658151 1.0288219 0.343458 0.563202 -0.2606868  
## 71 0.542672 -1.1410776 1.5663264 0.153044 -0.147126 0.0220289  
## 72 -0.133456 -1.2358857 1.3643656 0.587098 1.137936 0.1558647  
## 73 0.884197 -0.9037810 1.9560703 0.532338 0.085753 0.2296289  
## 74 -0.811314 -1.2214723 1.3641512 0.337327 -0.281146 -0.4619974  
## 75 0.482509 -0.8492396 1.3548131 -0.416076 0.538292 0.6422878  
## 76 -0.616464 -1.2468493 1.5962592 -0.712712 -1.098581 0.4093793  
## 77 0.333632 -0.4485911 1.3201698 0.498300 -0.018669 -0.3281109  
## 78 0.242155 -0.9747672 1.0625039 -0.493006 0.107051 0.0241712  
## 79 1.105357 -0.7027718 1.4668579 0.138766 -0.455491 0.4885355  
## 80 1.588384 -0.9507866 2.0090139 -0.113564 -0.015957 0.8415764  
## 81 -1.049541 -1.2857828 1.0403600 -0.783670 -1.135780 -0.5897773  
## 82 -0.213773 -1.2741177 1.5502014 -0.529094 -0.076900 0.9477810  
## 83 -0.230149 -1.1688130 1.3125603 -0.433913 0.373606 -0.3105860  
## 84 0.054134 -0.8916354 1.4321804 -0.035491 -0.547096 -0.2405030  
## 85 -0.379000 -1.8997100 2.1515470 -1.123021 -0.289894 0.5769556  
## 86 0.250776 -0.9338662 1.6897327 -0.865577 -0.808185 0.3079408  
## 87 -0.325527 -0.8526887 1.3289185 -0.158544 -0.025166 0.2332077  
## 88 -0.133009 -0.8370054 0.3865265 -0.430959 -0.009658 0.3395532  
## 89 0.014215 -0.4797384 0.8733203 0.279397 -0.877355 -0.5073573  
## 90 0.690564 -0.5789104 1.0064367 0.334826 0.417335 0.8011114  
## 91 -0.346856 -1.9148844 2.0954088 -0.632666 -0.378735 -0.4190737  
## 92 0.109656 -2.1175556 2.2603114 -1.616701 -0.004849 0.0358492  
## 93 0.429017 -0.6548310 1.1296321 -0.425306 -0.206157 -0.4122637  
## 94 -0.137401 -0.9018624 1.0627068 -0.176251 0.143345 -0.2327932  
## 95 0.475140 -0.8907470 1.5419961 0.032820 -0.611703 0.5897798  
## 96 -0.108090 -1.1507499 0.8680197 -0.711852 -0.061162 -0.1749752  
## 97 -0.750153 -2.0335128 1.6702131 -1.431171 -0.851330 -0.8762372  
## 98 0.123534 -1.2360685 2.0237624 0.038198 -0.630726 0.0117998  
## 99 0.334263 -1.3124184 1.7572904 -0.076635 -0.724198 -0.6853390  
## 100 -1.057466 -1.4354766 1.0739567 -0.943896 -1.053979 -2.2763469  
## 101 0.931537 -1.8445827 2.7803934 -1.407762 -1.368929 0.1445990  
## 102 1.455913 -1.3708729 2.5199561 -1.276885 -1.233243 0.3671514  
## 103 0.202821 -1.2796872 1.6186552 -0.828280 -0.926176 -0.0976107  
## 104 -2.667965 -1.8070401 0.9994409 -0.523645 -0.044687 0.8430610  
## 105 -1.594790 -2.0052480 1.3598150 -0.520153 -0.437063 -0.6543366  
## 106 -0.824885 -3.1887493 2.9181644 -2.779369 -1.410301 0.5072573  
## 107 -1.530525 -2.6396366 1.9749695 -1.560323 -0.736459 0.0293541  
## 108 -1.505317 -2.6592072 1.7134870 -1.641149 -0.038366 0.6542014  
## 109 -1.722807 -2.1637031 1.1401641 -1.046785 -0.143423 0.2429188  
## 110 -1.294197 -2.5696747 1.8211681 -1.727476 -0.172364 0.1461017  
## 111 -0.896675 -1.7858525 2.0138327 -0.823871 -1.849412 0.6613346  
## 112 -2.487292 -2.3733869 0.8469403 -1.217350 -1.171752 -1.9423032  
## 113 -3.468164 -2.5785663 1.7022176 -1.652400 -2.795053 -0.3197824  
## 114 -2.025174 -2.0255582 1.0387532 -0.586432 -0.175081 -0.2707585  
## 115 -1.310888 -0.2985004 -0.6649740 1.016144 1.610433 -0.5172730  
## 116 0.017029 0.3169393 -0.0605127 1.140856 0.255524 0.0394875  
## 117 1.017038 0.5776710 -0.1897738 0.460688 0.279895 0.8376811  
## 118 -1.235736 -0.8084111 0.3190920 0.720307 0.528640 -0.7312798  
## 119 -3.510387 0.2655600 -0.4334732 1.573676 1.456125 2.0041987  
## 120 -3.815647 0.0723259 -0.4884435 1.544600 1.503846 1.7586685  
## 121 -3.947471 -0.0226431 -0.3770231 0.668247 -1.042830 0.9989063  
## 122 -3.619251 -0.0459494 -1.0540996 0.652758 0.698391 0.8607225  
## 123 -2.867962 0.0367203 -0.8044710 0.483824 0.635700 1.3235548  
## 124 -2.759283 0.0328102 -0.6170355 0.677069 0.649301 2.3093542  
## 125 -3.890012 0.0014142 -0.5894355 0.865303 -0.149879 0.9449046  
## 126 -3.068163 -0.0700158 -0.9147601 0.372956 0.764041 2.2874844  
## 127 -3.815060 0.0225436 -0.5139195 0.938033 -0.165739 0.9575457  
## 128 -3.706535 -0.0700315 -0.2278501 0.220079 -0.050128 2.1902213  
## 129 -3.493543 -0.1030496 -0.9241170 0.561762 -0.249946 0.8951854  
## 131 -3.444343 -0.2269534 -0.9690569 0.768527 0.674617 1.5850746  
## 132 -3.709182 -0.0849643 -0.6681894 0.426828 -0.966889 0.5842630  
## 133 -2.688531 -0.0311919 -0.8955068 0.517676 0.830554 0.8926993  
## 134 -4.413103 -0.4799459 -0.7159561 1.492156 1.534247 0.6281697  
## 135 -3.547578 -0.6707273 -0.4106990 0.467897 0.736688 -0.1092320  
## 136 -3.015204 0.0614314 -0.9142146 0.757237 0.361219 1.6691990  
## 137 -2.765317 -0.0292081 -0.8250655 0.326573 0.143854 1.5291421  
## 138 -4.227755 -0.3256105 -1.0931816 0.407229 -0.319054 0.7265119  
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## 797 0.786524 -0.0600788 -0.3143864 0.122896 0.015224 0.0841617  
## 798 0.664676 -0.3542038 -0.0778148 -0.204438 -0.325429 0.5679944  
## 799 0.618325 -0.6194513 0.1280036 -0.288726 0.101518 0.1758843  
## 800 0.645267 -0.5998626 0.2154587 -0.736974 -0.543770 0.4284884  
## 801 0.565999 -0.2929412 -0.1731489 0.046024 0.390606 -0.0237543  
## 802 0.989088 -0.1904251 -0.0256756 -0.317821 0.192120 0.3644528  
## 803 -0.015636 -0.1157344 -0.6785854 0.150811 -0.202426 0.2520271  
## 804 0.124439 -0.3923717 -0.2309210 0.270382 -0.098185 -0.4178082  
## 805 0.396174 -0.5834707 -0.0443887 -0.209283 0.011039 0.1347420  
## 806 -0.152154 -0.8618173 0.0289547 -0.389499 0.035005 -0.4937311  
## 807 0.386814 0.0493876 -0.8115347 0.150069 0.029978 0.3114223  
## 808 1.454337 0.4777192 -0.8549008 -0.308067 -0.110909 1.5418004  
## 809 0.008302 -0.0676247 -0.8362242 -0.697932 0.134530 0.5277065  
## 810 0.258202 -0.0247417 -0.9102433 0.075257 -0.177879 0.4441452  
## 811 -0.060005 0.0123111 -0.8544035 0.245281 0.554911 0.4479596  
## 812 0.073423 0.2106846 -0.7263267 -0.169505 0.412048 0.4714829  
## 813 -0.130720 -0.1651778 -0.6092386 0.051796 -0.068168 0.2225754  
## 814 0.392737 0.1389008 -0.7454035 0.374482 0.177445 0.8617519  
## 815 0.334792 0.2949183 -1.0582011 0.341738 0.111718 0.9917117  
## 816 -0.658233 -0.2265871 -0.8977805 0.237575 0.715631 0.4699739  
## 817 0.006250 -0.0096616 -0.5621732 0.100365 -0.017678 0.1858861  
## 818 0.411126 -0.0784605 -0.9046119 -0.001643 -0.419907 0.8022428  
## 819 0.214298 -0.0148514 -0.6339434 0.156179 -0.047430 0.1655706  
## 820 -0.253242 -0.2294778 -0.5304700 0.327771 -0.006338 -0.6897332  
## 821 0.504714 0.3548253 -0.5524220 0.646087 0.293943 0.9428502  
## 822 -0.836203 -0.0251709 -0.7650422 0.813733 0.407641 0.1316432  
## 823 -1.061292 -0.1203087 -0.9441252 0.833463 0.654732 0.3557742  
## 824 -0.431076 -0.2065933 -0.5539436 0.062448 0.433254 0.0206179  
## 825 -0.357946 -0.3429156 -0.5742773 0.237241 -0.004579 -0.2714543  
## 826 0.079163 -0.7134183 -0.4274312 -0.214880 -0.150076 0.2726546  
## 827 -0.153407 -0.0093717 -0.7648510 0.522776 0.523357 0.4595005  
## 828 0.259593 -0.0880000 -0.5807207 0.411130 -0.227361 0.0418409  
## 829 -0.582119 -0.2920634 -0.1776979 0.969521 0.213945 -0.7705246  
## 830 0.856986 0.1882155 -0.7604916 0.127421 -0.039119 1.0073440  
## 831 -0.605814 -0.1561290 -0.6969755 0.577133 0.808430 -0.0876148  
##   
##   
## Site constraints (linear combinations of constraining variables)  
##   
## CCA1 CA1 CA2 CA3 CA4 CA5  
## 1 -0.428685 0.2301791 0.7508326 1.326242 0.056421 0.7022763  
## 2 -0.200234 -0.1668213 0.9341445 1.007864 1.601853 -0.6745184  
## 3 0.302358 -0.1658794 1.2065087 1.487660 0.809143 -0.5050452  
## 4 -0.230694 0.5035281 0.9209580 1.028159 1.574043 -0.5007007  
## 5 -0.245925 0.0395522 0.6750248 1.549459 0.720461 0.5770905  
## 6 0.424198 -0.1224180 1.1446838 2.115653 0.572892 -0.2974477  
## 7 -0.809437 0.0166295 0.4677143 1.183971 1.441230 0.5219365  
## 8 0.287128 -0.5563512 0.9467858 1.017996 0.679730 0.7468724  
## 9 -0.139314 -0.1386093 0.3128547 1.647596 0.929406 0.3092164  
## 10 -0.428685 -0.4540532 0.3441691 0.941174 0.662577 0.9744302  
## 11 0.378508 -0.7715533 0.8802212 1.367370 0.603242 -0.0006599  
## 12 -0.215464 -0.4374148 0.8626237 1.730369 1.223291 -0.0031247  
## 13 0.028217 -0.5874703 1.4967768 1.805918 -0.165274 -0.1711254  
## 14 -0.443915 -0.6300014 -0.0164760 1.226414 1.000667 1.1819051  
## 15 0.180517 -0.2379971 0.2604722 1.866301 0.899918 0.1886043  
## 16 -0.002244 -0.5472612 0.8707547 1.554322 0.952591 -0.5599887  
## 17 0.119597 -1.1779561 1.3035635 0.657444 0.684473 0.7572411  
## 18 -0.778977 -0.1042838 1.1358710 0.323401 1.049139 -0.0939187  
## 19 -0.002244 -0.2020322 0.3682677 1.406708 0.377379 0.0002960  
## 20 -0.489606 -0.8994501 0.9373968 0.720736 0.716155 0.3252739  
## 21 -0.504836 -0.3890275 0.3089569 1.205962 0.705010 0.6842110  
## 22 -0.733287 -0.5190538 0.8067318 0.897011 0.559214 0.9726752  
## 23 -0.459145 -1.1031431 0.3228712 0.108639 0.760810 0.5521459  
## 24 -0.322075 -0.7270844 -0.2164381 1.548891 1.573361 0.7381714  
## 25 -0.474375 -0.9654060 -0.1658720 1.065849 1.167386 -0.1613543  
## 26 -0.230694 -0.4793632 0.2996168 1.922681 1.641343 0.3004667  
## 27 -0.398225 -1.0852116 -0.0784295 0.851958 0.970965 0.4586078  
## 28 -0.139314 -0.7930420 0.2796747 1.376384 0.174497 -0.5440706  
## 29 -0.580986 -0.6181017 0.7854170 1.080449 0.558248 0.2247800  
## 30 -0.611446 -0.5556778 0.2121434 1.491847 1.617501 0.2793369  
## 31 -0.428685 -0.6337552 -0.4286489 0.936470 0.690479 -0.3764655  
## 32 -0.428685 -0.8569775 0.3583212 1.237327 0.949814 0.4599673  
## 33 -0.459145 -0.9180357 0.1748633 1.198898 1.479344 0.5325693  
## 34 -0.504836 -0.5007671 0.6842951 1.470574 1.240016 0.8127738  
## 35 0.043447 -0.8200774 0.4002051 1.367760 1.084410 -0.1091693  
## 36 -0.322075 -1.1559328 0.2149613 0.800594 1.147172 0.4201853  
## 37 -0.337305 -1.0684403 1.1564075 1.256714 0.534810 -1.3848668  
## 38 -0.489606 -0.6173927 -0.5066133 0.681232 0.291913 0.2684695  
## 39 -0.413455 -0.7465459 -0.2855281 0.837016 0.469476 0.6935076  
## 40 -0.413455 -0.9335494 -0.5490157 0.540260 1.094294 0.8313306  
## 41 -0.200234 -0.2198677 -0.0768710 2.392682 1.480389 0.5152071  
## 42 -0.398225 -1.3997159 0.3432977 0.533430 1.119632 1.0289854  
## 43 -0.520066 -1.2191909 0.3038222 0.453151 0.856880 0.4578415  
## 44 -0.185004 -1.0577161 0.4377613 0.749508 0.660417 0.9364140  
## 45 -0.413455 -1.3050256 0.7595553 0.647309 1.011148 0.8197802  
## 46 -0.459145 -1.7960108 0.5560281 -0.530693 1.214330 1.0489655  
## 47 -0.245925 -1.8031219 0.4891448 -0.285261 1.136352 0.4320251  
## 48 -0.337305 -1.6691247 0.7623476 0.246709 0.989124 1.0005520  
## 49 0.348048 -0.4241435 0.8128087 1.252852 1.544273 -0.7319220  
## 50 -0.230694 -1.1449464 0.9330526 0.979743 0.725565 1.1627645  
## 51 0.424198 -1.7526507 1.0923633 0.108357 1.329344 1.2939131  
## 52 -0.261155 -1.8600231 1.0193426 -0.258719 0.942034 0.3209533  
## 53 -0.261155 -1.7920320 1.4278605 0.183228 0.978073 0.9363233  
## 54 -0.200234 -1.3920004 0.1475745 0.113177 1.448362 1.0738686  
## 55 -0.108854 -1.6112779 1.2145003 0.436210 0.730539 0.8749537  
## 56 -0.245925 -1.5481797 0.9127183 0.455238 1.373808 0.8639336  
## 57 -0.261155 -1.4977318 -0.1913970 1.344158 2.302584 0.9100564  
## 58 -0.108854 -1.7124209 0.9629215 1.107031 2.530584 0.9092191  
## 59 0.134827 -1.5989833 1.3446685 0.336119 0.931179 0.9117581  
## 60 0.165287 -1.0356547 1.5852091 1.658068 1.246176 0.4100228  
## 61 0.241438 -1.3580591 0.9584553 0.258140 0.712645 1.1114046  
## 62 0.028217 -1.3111328 1.1413024 0.357277 1.354684 0.9910754  
## 63 0.210977 -1.3253851 1.1950618 0.709926 1.112293 0.3826009  
## 64 -0.108854 -2.1427777 1.3406358 -0.714006 0.088973 0.8275382  
## 65 -0.017474 -1.9760701 1.1756078 -0.584390 0.927043 1.1075052  
## 66 0.180517 -1.1005089 1.0351328 0.822936 0.695330 0.6472775  
## 67 0.012987 -1.8323558 1.0223000 -0.312475 0.708020 0.6962846  
## 68 -0.017474 -1.4434578 0.6873630 0.852929 1.229542 0.3762009  
## 69 0.089137 -1.7640386 1.9118558 0.218537 0.444707 0.8735927  
## 70 0.439428 -0.8658151 1.0288219 0.343458 0.563202 -0.2606868  
## 71 0.439428 -1.1410776 1.5663264 0.153044 -0.147126 0.0220289  
## 72 0.439428 -1.2358857 1.3643656 0.587098 1.137936 0.1558647  
## 73 0.439428 -0.9037810 1.9560703 0.532338 0.085753 0.2296289  
## 74 0.439428 -1.2214723 1.3641512 0.337327 -0.281146 -0.4619974  
## 75 0.469888 -0.8492396 1.3548131 -0.416076 0.538292 0.6422878  
## 76 0.485119 -1.2468493 1.5962592 -0.712712 -1.098581 0.4093793  
## 77 0.439428 -0.4485911 1.3201698 0.498300 -0.018669 -0.3281109  
## 78 0.469888 -0.9747672 1.0625039 -0.493006 0.107051 0.0241712  
## 79 0.287128 -0.7027718 1.4668579 0.138766 -0.455491 0.4885355  
## 80 0.287128 -0.9507866 2.0090139 -0.113564 -0.015957 0.8415764  
## 81 0.469888 -1.2857828 1.0403600 -0.783670 -1.135780 -0.5897773  
## 82 0.469888 -1.2741177 1.5502014 -0.529094 -0.076900 0.9477810  
## 83 0.485119 -1.1688130 1.3125603 -0.433913 0.373606 -0.3105860  
## 84 0.454658 -0.8916354 1.4321804 -0.035491 -0.547096 -0.2405030  
## 85 0.469888 -1.8997100 2.1515470 -1.123021 -0.289894 0.5769556  
## 86 0.485119 -0.9338662 1.6897327 -0.865577 -0.808185 0.3079408  
## 87 0.424198 -0.8526887 1.3289185 -0.158544 -0.025166 0.2332077  
## 88 0.530809 -0.8370054 0.3865265 -0.430959 -0.009658 0.3395532  
## 89 0.530809 -0.4797384 0.8733203 0.279397 -0.877355 -0.5073573  
## 90 0.606959 -0.5789104 1.0064367 0.334826 0.417335 0.8011114  
## 91 0.683109 -1.9148844 2.0954088 -0.632666 -0.378735 -0.4190737  
## 92 0.713569 -2.1175556 2.2603114 -1.616701 -0.004849 0.0358492  
## 93 0.728800 -0.6548310 1.1296321 -0.425306 -0.206157 -0.4122637  
## 94 0.698339 -0.9018624 1.0627068 -0.176251 0.143345 -0.2327932  
## 95 0.424198 -0.8907470 1.5419961 0.032820 -0.611703 0.5897798  
## 96 0.698339 -1.1507499 0.8680197 -0.711852 -0.061162 -0.1749752  
## 97 0.713569 -2.0335128 1.6702131 -1.431171 -0.851330 -0.8762372  
## 98 0.683109 -1.2360685 2.0237624 0.038198 -0.630726 0.0117998  
## 99 0.667879 -1.3124184 1.7572904 -0.076635 -0.724198 -0.6853390  
## 100 0.698339 -1.4354766 1.0739567 -0.943896 -1.053979 -2.2763469  
## 101 0.728800 -1.8445827 2.7803934 -1.407762 -1.368929 0.1445990  
## 102 0.713569 -1.3708729 2.5199561 -1.276885 -1.233243 0.3671514  
## 103 0.713569 -1.2796872 1.6186552 -0.828280 -0.926176 -0.0976107  
## 104 0.256668 -1.8070401 0.9994409 -0.523645 -0.044687 0.8430610  
## 105 0.637419 -2.0052480 1.3598150 -0.520153 -0.437063 -0.6543366  
## 106 0.591729 -3.1887493 2.9181644 -2.779369 -1.410301 0.5072573  
## 107 0.591729 -2.6396366 1.9749695 -1.560323 -0.736459 0.0293541  
## 108 0.591729 -2.6592072 1.7134870 -1.641149 -0.038366 0.6542014  
## 109 0.667879 -2.1637031 1.1401641 -1.046785 -0.143423 0.2429188  
## 110 0.622189 -2.5696747 1.8211681 -1.727476 -0.172364 0.1461017  
## 111 0.591729 -1.7858525 2.0138327 -0.823871 -1.849412 0.6613346  
## 112 0.561269 -2.3733869 0.8469403 -1.217350 -1.171752 -1.9423032  
## 113 0.546039 -2.5785663 1.7022176 -1.652400 -2.795053 -0.3197824  
## 114 0.546039 -2.0255582 1.0387532 -0.586432 -0.175081 -0.2707585  
## 115 0.180517 -0.2985004 -0.6649740 1.016144 1.610433 -0.5172730  
## 116 -0.124084 0.3169393 -0.0605127 1.140856 0.255524 0.0394875  
## 117 -0.276385 0.5776710 -0.1897738 0.460688 0.279895 0.8376811  
## 118 -0.352535 -0.8084111 0.3190920 0.720307 0.528640 -0.7312798  
## 119 -3.505158 0.2655600 -0.4334732 1.573676 1.456125 2.0041987  
## 120 -3.505158 0.0723259 -0.4884435 1.544600 1.503846 1.7586685  
## 121 -3.520388 -0.0226431 -0.3770231 0.668247 -1.042830 0.9989063  
## 122 -3.231017 -0.0459494 -1.0540996 0.652758 0.698391 0.8607225  
## 123 -3.231017 0.0367203 -0.8044710 0.483824 0.635700 1.3235548  
## 124 -2.956876 0.0328102 -0.6170355 0.677069 0.649301 2.3093542  
## 125 -2.956876 0.0014142 -0.5894355 0.865303 -0.149879 0.9449046  
## 126 -2.956876 -0.0700158 -0.9147601 0.372956 0.764041 2.2874844  
## 127 -2.956876 0.0225436 -0.5139195 0.938033 -0.165739 0.9575457  
## 128 -5.561217 -0.0700315 -0.2278501 0.220079 -0.050128 2.1902213  
## 129 -2.987336 -0.1030496 -0.9241170 0.561762 -0.249946 0.8951854  
## 131 -2.987336 -0.2269534 -0.9690569 0.768527 0.674617 1.5850746  
## 132 -3.063486 -0.0849643 -0.6681894 0.426828 -0.966889 0.5842630  
## 133 -3.063486 -0.0311919 -0.8955068 0.517676 0.830554 0.8926993  
## 134 -3.002566 -0.4799459 -0.7159561 1.492156 1.534247 0.6281697  
## 135 -3.002566 -0.6707273 -0.4106990 0.467897 0.736688 -0.1092320  
## 136 -3.002566 0.0614314 -0.9142146 0.757237 0.361219 1.6691990  
## 137 -3.002566 -0.0292081 -0.8250655 0.326573 0.143854 1.5291421  
## 138 -2.835035 -0.3256105 -1.0931816 0.407229 -0.319054 0.7265119  
## 139 -3.002566 -0.2721409 -0.8144800 -0.089141 -1.716571 0.4862142  
## 140 -3.002566 -0.3139420 -1.0204967 -0.161151 -2.766180 -1.2738045  
## 141 -2.941646 -0.0873920 -0.6284575 0.201552 -1.801847 0.6946686  
## 142 -2.941646 -0.6386124 -0.8617370 -0.085657 -1.883798 -0.7831389  
## 143 -2.956876 -0.2064953 -0.6564618 0.307766 -1.198107 -0.0936881  
## 144 -2.941646 0.0071322 -0.8240136 0.484863 -1.355332 0.8883512  
## 145 -2.362903 -0.3813534 -0.8927668 -0.461981 -3.089334 0.0611781  
## 146 -2.362903 -0.6083237 -0.7288664 -0.024600 -2.632413 -1.3895586  
## 147 -2.880725 -0.3282611 -0.0510652 -0.051362 -0.047968 1.5253957  
## 148 -2.499974 -0.2181156 -0.0112682 0.454315 0.078497 1.3583527  
## 149 -2.225833 -0.4713860 0.5338956 -0.117551 -1.053095 0.9793164  
## 150 -2.225833 -0.3588121 0.0840422 0.285559 -0.454909 0.9098878  
## 151 -2.560894 -0.9038537 -0.1695189 -0.978549 -5.441483 -2.0261133  
## 152 -2.560894 -0.9762279 -0.3353987 -1.141163 -5.484157 -2.0893916  
## 153 -2.560894 -1.0117020 -0.2631915 -1.238957 -7.840017 -3.6542603  
## 154 -2.530434 -0.9016996 -0.4473604 -0.664182 -5.419823 -3.3775659  
## 155 -2.119222 -0.4376003 -0.2069006 1.044926 1.172839 0.9293387  
## 156 -2.164912 -0.5686242 -0.0498384 0.320983 -0.094540 0.1979808  
## 157 -2.164912 -0.2981240 0.3658840 0.902139 -0.184688 -0.2683705  
## 158 -1.829851 -0.8511580 -0.0021724 0.408927 0.834975 -0.0566123  
## 159 -1.403409 -0.2917062 -0.9540196 0.081873 -1.368152 1.8724866  
## 160 -1.403409 -0.2056508 -0.9181020 0.341180 -1.088423 1.3561941  
## 161 -1.403409 -0.1801165 -0.9589418 0.234181 -1.877293 1.2051571  
## 162 -1.433869 -0.1663724 0.0613462 1.373585 -0.935006 -0.2252396  
## 163 -1.921231 -0.3491529 -0.4702705 0.999492 -0.749236 0.1471848  
## 164 -1.327259 -0.1329633 -1.1250658 0.033739 -3.334390 0.8241222  
## 165 -1.479560 -0.3080826 -1.2478182 0.183143 -1.375713 0.7428862  
## 166 -1.890771 -0.2045898 -0.6656658 0.597171 -1.054356 0.1744261  
## 167 -1.616630 -0.3640600 -0.7037376 0.109546 -2.928696 0.0503661  
## 168 -1.784161 -0.4695679 -0.6537165 0.674121 0.737142 0.2281130  
## 169 -1.220649 -1.2984960 -0.7395031 -0.286116 -0.119195 -2.5078609  
## 170 -3.870680 -1.1308026 0.3695212 -1.596743 -3.898135 0.1329050  
## 171 -3.048256 -1.4983546 0.5764768 -1.498312 -4.718421 0.1137103  
## 172 -1.479560 -1.2173169 -0.1246124 -0.500247 0.170496 0.8946394  
## 173 -4.571262 -0.9608737 0.3798828 -0.357870 -1.911980 0.4693745  
## 174 -1.083578 -1.8780295 0.9206211 -1.207680 -0.974805 0.3663491  
## 175 -0.520066 -1.2217678 -0.4697428 1.379792 1.809536 1.2064274  
## 176 -0.520066 -0.9501698 -0.3306890 1.523925 1.447448 0.3544377  
## 177 -0.413455 -2.5588580 1.4938218 -1.967338 -0.051652 0.1171951  
## 178 0.820180 -0.1625807 -1.0201664 -0.092375 0.151365 0.2818741  
## 179 -0.413455 -0.9424159 -0.7842531 -0.255366 -0.278822 -3.1816274  
## 180 -0.047934 -0.9231735 -0.4763393 -0.657883 0.141413 -0.3931127  
## 181 -0.291615 -0.4331817 -0.8099014 0.353044 0.847506 -0.6005701  
## 182 -0.002244 -0.6820580 -1.2172337 0.268313 1.403493 -3.2748437  
## 183 0.028217 -0.6680860 -1.4958838 0.733197 1.014659 -3.1534029  
## 184 -0.002244 -0.7030315 -1.3001964 0.646323 1.132898 -1.6334694  
## 185 0.408968 -0.7418572 -0.7892269 0.768157 1.077766 -0.9010044  
## 186 0.073907 -0.5904727 -1.2474399 0.665386 1.291573 -1.2462670  
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## 631 -0.017474 0.6890236 -0.3602412 0.470362 0.291175 0.4922775  
## 632 0.043447 0.7172775 -0.1154412 0.748042 -0.799726 -0.5010975  
## 633 0.073907 0.4888576 -0.2095066 1.445691 -0.312304 0.2764538  
## 634 0.058677 0.5015888 -0.2048183 0.545755 0.097077 0.2199766  
## 635 -0.078394 0.4821532 -0.4235361 0.425487 0.240229 0.4664051  
## 636 -0.032704 0.8809587 -0.4084664 0.205348 -0.654977 1.0313177  
## 637 -0.535296 0.9877977 -0.1345016 -0.329144 0.648433 0.9733690  
## 638 -0.063164 0.7406657 -0.3714175 0.156281 0.318227 0.5457750  
## 639 0.012987 0.6505478 -0.6288110 0.006215 0.406530 0.7096184  
## 640 0.058677 0.4766190 -0.3571715 0.766549 0.184568 0.4828965  
## 641 -0.093624 0.5109377 -0.3786588 0.511459 0.353089 0.4193511  
## 642 0.028217 0.4216637 -0.5640385 0.587258 0.139948 0.4826461  
## 643 -0.047934 0.7099869 -0.3782874 0.367662 0.148884 0.8434800  
## 644 -0.078394 0.5197902 -0.5218369 0.645144 -0.220436 0.5839094  
## 645 -0.002244 0.4360435 -0.2218322 1.075087 -0.095007 0.0138653  
## 646 0.012987 0.3605654 -0.4171503 0.962359 -0.406384 0.3869293  
## 647 0.012987 0.2885168 -0.4089708 0.446464 -0.152354 0.9051875  
## 648 -0.017474 0.7187917 -0.4686883 0.331880 -0.434915 0.8137076  
## 649 -0.413455 0.4265454 -0.4098631 0.774941 0.250597 0.5493928  
## 650 0.012987 0.3932860 -0.2128098 1.156773 -0.804263 0.3234541  
## 651 0.012987 0.2421124 -0.7132402 0.489270 0.046331 0.5066623  
## 652 0.012987 0.5447658 -0.4367993 0.391042 0.324142 0.6601308  
## 653 -0.626676 0.6066898 0.3200209 1.357822 0.229408 0.2308356  
## 654 -0.139314 0.4400169 -0.4862826 0.621675 -0.099076 1.0015230  
## 655 -0.093624 0.4163956 -0.5264991 1.032555 0.624715 0.7513741  
## 656 -0.139314 0.2961879 -0.3735912 0.665744 0.442662 0.7936785  
## 657 -0.550526 0.0814610 -0.5461750 0.695158 0.822268 -0.0614477  
## 658 -0.657136 0.4420867 -0.3588199 0.679169 0.120786 0.6373457  
## 659 0.454658 -0.5282620 0.2294226 1.176521 0.346568 0.0620562  
## 660 -0.748517 -0.1675470 -1.1864510 0.081624 0.304578 0.0324255  
## 661 -0.839897 -0.7532092 -0.8120047 0.793767 1.174071 -1.0545007  
## 662 -0.809437 -0.8859025 -0.7223999 0.788015 1.724051 -1.1451647  
## 663 -0.596216 -0.6240359 -1.0849998 0.498889 1.120923 -1.2572470  
## 664 0.134827 -0.3830004 -1.6509962 0.809409 1.131614 -0.6565971  
## 665 -0.733287 -0.8706913 -0.9137841 0.749247 1.427604 -1.7223779  
## 666 -0.733287 -0.7156891 -0.4685469 -0.343292 -0.800774 -0.3461496  
## 667 0.089137 -0.8502830 -1.0523177 0.514294 1.056352 -1.2019765  
## 668 -0.535296 -0.5991906 -0.9529301 0.731421 1.189729 -1.5019283  
## 669 -0.550526 -0.5577192 -0.9255480 0.782749 1.417849 -0.9454963  
## 670 0.363278 -0.4669146 -1.3074853 0.240542 -0.144706 -1.5860193  
## 671 0.317588 -0.1488551 -0.9858879 -0.336354 -0.092743 0.3046119  
## 672 -0.367765 -0.1892351 -1.2278190 -0.077164 0.576737 0.4116568  
## 673 -0.398225 -0.1806837 -1.0557683 -0.018297 0.205219 -0.3228484  
## 674 0.287128 -0.1460993 -1.1170558 -0.504300 0.023849 0.2389269  
## 675 0.150057 -0.4340399 -1.1341829 -0.209010 -1.142049 -1.2729813  
## 676 -0.413455 -0.6340002 -1.1462935 0.551851 1.230000 -0.7324936  
## 677 0.530809 0.1704514 -1.4010650 -0.153809 -0.268222 0.8343560  
## 678 0.987711 0.0967071 -1.0803103 0.114618 -0.966192 0.2602753  
## 679 -0.398225 -0.0873301 -1.2537951 0.080367 0.731946 0.2429082  
## 680 -0.398225 -0.5980613 -1.2049719 0.633805 1.220489 -0.6016756  
## 681 -0.352535 -0.5240000 -1.0485556 0.886824 1.858240 -0.1958532  
## 682 0.454658 0.2922939 -1.2753075 -0.197720 0.010166 1.1772099  
## 683 0.439428 0.2947069 -1.2740592 -0.327092 0.039102 1.0498611  
## 684 0.485119 -0.2367597 -0.8131716 -0.124721 -1.755486 0.1025211  
## 685 1.475073 -0.1598314 -1.4459683 0.248607 0.241697 0.5369899  
## 686 0.348048 -0.3936112 -0.8492428 0.464674 0.727050 -0.0423948  
## 687 0.134827 -0.2094779 -1.1860525 0.039634 0.684913 0.0637410  
## 688 -0.398225 -1.0094424 -0.8755978 0.370127 0.839388 -1.0840672  
## 689 -0.382995 -0.5650093 -1.2947818 0.340724 -1.041833 -2.0969005  
## 690 -0.306845 -0.4745055 -0.7279114 -0.218401 0.501641 0.2881636  
## 691 0.408968 -0.0122298 -1.1151111 -0.100129 0.261142 -0.0268791  
## 692 0.622189 -0.3232026 -1.0169398 0.155704 0.521306 -0.1791246  
## 694 -0.367765 -0.5679011 -1.0609605 0.534617 1.016037 -0.6729808  
## 695 1.322772 0.0295078 -1.1380460 -0.405660 -0.915263 0.1157614  
## 696 0.835410 -0.2611596 -1.2886232 -0.002803 -0.441402 0.5866670  
## 697 -0.245925 -0.1882850 -1.0861210 0.122040 0.293819 0.1701945  
## 698 0.378508 -0.0246680 -1.1501643 0.246997 0.579352 0.4019530  
## 699 0.317588 -0.6768295 -1.1804851 0.173682 -0.102104 -0.9040613  
## 700 0.942020 -0.5441377 -0.9052995 0.205144 -0.091621 -0.1584218  
## 701 0.287128 -0.3883673 -0.7680173 -0.104990 0.484456 -0.1649763  
## 702 1.810134 0.0492349 -1.1967778 -0.316874 0.676776 -0.1431206  
## 703 1.977665 -0.0139116 -1.1517712 -0.140439 0.811063 -0.6693671  
## 704 0.454658 -0.5360195 -0.9764813 0.506299 0.828405 -0.4682163  
## 705 0.820180 0.1181532 -1.0363965 -0.299213 -0.216665 -0.0302880  
## 706 0.271898 -0.4492138 -0.6716594 -0.489307 0.616088 -0.4907273  
## 707 1.322772 -0.6326805 -0.6875432 -0.259084 -0.169170 -0.3365442  
## 708 1.383692 -0.0454790 -1.5593997 -0.070229 -2.547057 0.5301083  
## 709 0.789720 0.1026307 -1.1114384 -0.501906 -0.091964 0.4671939  
## 710 0.865870 -0.3566626 -0.6989014 0.140162 -0.945440 -0.3015703  
## 711 0.546039 -0.3658197 -0.9760417 0.191046 0.449875 0.4850269  
## 712 0.469888 -0.7083124 -0.7738219 0.207455 1.050808 -0.0056534  
## 713 0.804950 -0.8128544 -0.7571575 0.155445 0.629213 -0.0626888  
## 714 0.454658 -0.5347920 -1.3374233 0.442557 0.642498 -0.8407363  
## 715 0.683109 -0.6040858 -1.3387625 0.745370 1.389107 -0.2990647  
## 716 1.292312 -0.4427779 -0.8952434 0.350225 0.464735 -0.3924480  
## 717 0.759260 0.0029425 -1.3412870 -0.053442 -0.714162 0.9447537  
## 718 0.561269 -0.5231813 -1.3312357 0.721391 1.135103 -0.5842383  
## 719 0.561269 -0.6946344 -1.0086466 0.705539 0.928283 -0.7261005  
## 720 0.591729 -0.9416963 -0.8292650 0.175919 0.716440 -1.0115706  
## 721 0.546039 -0.5543950 -1.2722665 0.591489 1.158978 -0.1657634  
## 722 0.622189 -0.6944156 -1.2295668 0.368218 -0.621253 -1.6156742  
## 723 0.378508 -0.3585515 -1.1746111 0.466439 0.550481 -0.1888829  
## 724 0.485119 -0.5164109 -1.0357088 0.812495 0.785020 -1.3290015  
## 725 1.673063 -1.0965660 -0.7702577 0.927110 1.897893 -1.1900744  
## 726 1.414152 -0.9311473 -0.9029948 0.754376 0.588587 -1.9706405  
## 727 0.561269 -0.6484283 -0.9018789 0.555993 0.923859 -0.7229099  
## 728 0.348048 -0.7227998 -0.9193642 0.432148 0.459883 -0.6255194  
## 729 0.363278 -0.6839120 -1.2235115 0.723687 1.373746 -1.0965174  
## 730 0.348048 -0.7236574 -1.2303524 0.572678 1.019456 -2.6950953  
## 731 0.287128 -1.2164290 -0.2649544 -0.002732 0.925361 -1.5006799  
## 732 0.287128 -0.8966416 -0.4024154 0.105329 0.749503 -0.6449617  
## 733 0.287128 -0.9029568 -0.8007131 0.336805 0.796720 -1.1369993  
## 734 0.241438 -0.8791315 -0.6866214 0.087461 0.688170 -0.9831081  
## 735 0.226207 -0.8689042 -0.7911594 0.239059 0.774637 -1.1409287  
## 736 -1.784161 -0.2097007 -1.4804156 -0.161897 -0.146348 -3.8965600  
## 737 -2.073532 0.1170705 -1.1374108 -0.930419 -0.289264 -0.5129266  
## 738 -1.418639 -0.5044019 -0.9327063 0.030609 0.465782 -0.3589412  
## 739 -1.875541 0.1414683 -1.1389405 -0.532769 0.001621 0.8936858  
## 740 -1.190188 -0.2780095 -1.0808642 -0.195550 -0.597409 -0.1888817  
## 741 -1.631860 0.0244833 -1.2742277 -0.219892 -1.171779 -0.7383974  
## 742 -1.357719 0.0527271 -1.1493000 -0.633596 -0.297930 0.6012379  
## 743 -1.251109 0.0502337 -1.4619223 -0.284397 -0.177565 -1.3445993  
## 744 -1.083578 0.0273243 -1.0300485 -0.582251 -1.032425 -0.9922810  
## 745 -1.174958 0.2180748 -1.1424700 -0.443303 -0.328088 0.7886603  
## 746 -1.007428 -0.7002534 -0.9892037 -0.093700 -0.375174 -2.3779183  
## 747 -0.961737 0.3774281 -1.1827315 -0.808064 -0.503564 0.9081424  
## 748 -0.916047 -0.6337824 -1.0469725 0.252300 0.468721 -0.9252962  
## 749 -1.144498 0.0172697 -0.9632341 -0.238859 0.258153 0.5121267  
## 750 -0.946507 -0.9148225 -0.8255331 0.129018 0.318765 -1.6981535  
## 751 -0.946507 -0.9820925 -0.5372449 -0.366492 -0.486747 -1.7959472  
## 752 -0.748517 -0.6180816 -1.3002487 0.068199 0.197650 -3.2590811  
## 753 -0.611446 -0.8048239 -1.4525914 -0.123121 -0.556192 -5.3303452  
## 754 -0.976968 -0.8610785 -0.9157155 -0.015593 -0.536560 -3.5454970  
## 755 -0.672366 -0.6598105 -1.2548662 0.623393 1.003703 -1.8542637  
## 756 -0.535296 -0.5188549 -1.4155413 0.397115 0.069932 -1.9747001  
## 757 -1.068348 -0.0249397 -1.3518700 -0.354702 -0.281178 0.2163355  
## 758 -1.403409 -0.6019174 -0.9160434 -0.006801 -0.881996 -1.9388803  
## 759 -0.885587 -0.1949407 -1.0996297 -0.555466 -0.630697 -0.0737551  
## 760 -1.540480 -0.4440742 -0.9994386 0.109156 0.492067 -1.1216040  
## 761 -1.190188 -0.4052665 -1.5689725 0.396502 0.895019 -0.7637531  
## 762 -0.413455 -0.1076426 -1.5582664 -0.233623 0.115574 -2.2368626  
## 763 -0.748517 -0.2471473 -1.3307753 -0.171179 0.357947 -1.5257237  
## 764 -0.428685 -0.4327082 -1.0949449 -0.379864 -0.431160 -2.1524849  
## 765 -0.931277 -0.2435676 -0.8686788 -0.379863 -0.562779 -0.2475647  
## 766 -0.306845 -0.2039880 -0.7303853 -0.837429 -0.504036 0.4625824  
## 767 0.591729 0.5193168 -0.5986855 0.072620 -0.271671 0.8533554  
## 768 0.546039 0.3613154 -0.3799478 -0.248055 0.076208 0.3151380  
## 769 0.500349 0.6907270 -0.1642508 -0.042158 -0.799458 -0.6059240  
## 770 0.393738 0.3620721 -1.0817693 -0.547519 -0.478581 0.6117858  
## 771 1.063861 -0.6789110 -0.9154450 -0.260247 0.115371 -0.4646653  
## 772 0.424198 0.4691857 -0.6435736 -0.363027 -0.466164 0.6572675  
## 773 0.439428 -0.0520375 -1.0846112 -0.371133 -1.142894 -0.7675041  
## 774 1.094321 -0.3816601 -0.9488714 0.245534 0.230489 -1.1330874  
## 775 0.348048 0.5837669 -0.8041485 -0.449276 -0.301880 1.0701185  
## 776 0.393738 0.6473719 -0.6592462 -0.300858 -0.544533 0.9956777  
## 777 0.287128 0.4304902 -0.6794503 -0.405973 -0.204988 1.0351659  
## 778 0.302358 0.5003520 -0.7790288 -0.391207 -0.095819 0.9529459  
## 779 0.317588 0.6276065 -0.7395263 -0.583266 -0.519876 0.9198035  
## 780 0.134827 0.5788442 -0.6407271 -0.328839 -1.207614 0.4414831  
## 781 0.165287 0.2545684 -0.6506751 -0.284876 -0.996407 1.0564722  
## 782 0.165287 0.3009929 -0.8079081 -0.124102 -0.085894 1.3757880  
## 783 0.043447 0.2877353 -0.6902371 0.080429 -0.809344 1.0390133  
## 784 0.028217 0.2661958 -0.9632112 0.030452 -0.112331 1.2763007  
## 785 0.028217 0.4276547 -1.0318273 -0.341413 0.025932 1.2175882  
## 786 0.043447 0.4417703 -0.5141723 -0.008669 -0.501787 1.5654154  
## 787 -0.032704 0.6056139 -1.0317706 -0.233729 -1.883023 1.5974672  
## 788 -0.032704 0.2444768 -1.1878261 -0.044583 -0.013535 1.0498281  
## 789 0.728800 -0.4856776 0.0417908 -0.210798 0.141988 -0.6377292  
## 790 0.820180 -0.4429481 0.0438791 -0.254209 -0.753098 0.2510483  
## 791 0.759260 -0.2012184 -0.3255673 -0.057216 -0.409642 0.1555495  
## 792 -0.032704 0.3492156 -1.4706242 -0.130912 -0.529103 1.5165304  
## 793 -0.002244 -0.0797785 -0.8857314 -0.233929 -0.194229 0.1512142  
## 794 0.789720 -0.3662990 -0.1382645 0.008894 -0.528654 0.3700054  
## 795 0.744030 -0.2891824 -0.3675595 -0.158212 -0.194461 -0.6734905  
## 796 0.637419 -0.4373300 0.2664366 -0.049381 -0.026345 0.4853873  
## 797 0.652649 -0.0600788 -0.3143864 0.122896 0.015224 0.0841617  
## 798 0.667879 -0.3542038 -0.0778148 -0.204438 -0.325429 0.5679944  
## 799 0.789720 -0.6194513 0.1280036 -0.288726 0.101518 0.1758843  
## 800 0.728800 -0.5998626 0.2154587 -0.736974 -0.543770 0.4284884  
## 801 0.865870 -0.2929412 -0.1731489 0.046024 0.390606 -0.0237543  
## 802 0.759260 -0.1904251 -0.0256756 -0.317821 0.192120 0.3644528  
## 803 -0.017474 -0.1157344 -0.6785854 0.150811 -0.202426 0.2520271  
## 804 0.774490 -0.3923717 -0.2309210 0.270382 -0.098185 -0.4178082  
## 805 0.683109 -0.5834707 -0.0443887 -0.209283 0.011039 0.1347420  
## 806 0.713569 -0.8618173 0.0289547 -0.389499 0.035005 -0.4937311  
## 807 -0.002244 0.0493876 -0.8115347 0.150069 0.029978 0.3114223  
## 808 -0.139314 0.4777192 -0.8549008 -0.308067 -0.110909 1.5418004  
## 809 -0.139314 -0.0676247 -0.8362242 -0.697932 0.134530 0.5277065  
## 810 -0.093624 -0.0247417 -0.9102433 0.075257 -0.177879 0.4441452  
## 811 -0.093624 0.0123111 -0.8544035 0.245281 0.554911 0.4479596  
## 812 -0.124084 0.2106846 -0.7263267 -0.169505 0.412048 0.4714829  
## 813 -0.093624 -0.1651778 -0.6092386 0.051796 -0.068168 0.2225754  
## 814 -0.047934 0.1389008 -0.7454035 0.374482 0.177445 0.8617519  
## 815 -0.124084 0.2949183 -1.0582011 0.341738 0.111718 0.9917117  
## 816 -0.047934 -0.2265871 -0.8977805 0.237575 0.715631 0.4699739  
## 817 -0.215464 -0.0096616 -0.5621732 0.100365 -0.017678 0.1858861  
## 818 -0.154544 -0.0784605 -0.9046119 -0.001643 -0.419907 0.8022428  
## 819 -0.063164 -0.0148514 -0.6339434 0.156179 -0.047430 0.1655706  
## 820 0.378508 -0.2294778 -0.5304700 0.327771 -0.006338 -0.6897332  
## 821 -0.093624 0.3548253 -0.5524220 0.646087 0.293943 0.9428502  
## 822 -0.154544 -0.0251709 -0.7650422 0.813733 0.407641 0.1316432  
## 823 -0.093624 -0.1203087 -0.9441252 0.833463 0.654732 0.3557742  
## 824 -0.124084 -0.2065933 -0.5539436 0.062448 0.433254 0.0206179  
## 825 -0.124084 -0.3429156 -0.5742773 0.237241 -0.004579 -0.2714543  
## 826 1.002941 -0.7134183 -0.4274312 -0.214880 -0.150076 0.2726546  
## 827 0.195747 -0.0093717 -0.7648510 0.522776 0.523357 0.4595005  
## 828 0.195747 -0.0880000 -0.5807207 0.411130 -0.227361 0.0418409  
## 829 -0.154544 -0.2920634 -0.1776979 0.969521 0.213945 -0.7705246  
## 830 -0.215464 0.1882155 -0.7604916 0.127421 -0.039119 1.0073440  
## 831 0.134827 -0.1561290 -0.6969755 0.577133 0.808430 -0.0876148  
##   
##   
## Biplot scores for constraining variables  
##   
## CCA1 CA1 CA2 CA3 CA4 CA5  
## arctic.env$tmin -1 0 0 0 0 0

View(arctic\_pollen\_cca\_tmax$CCA$eig)  
View(arctic\_pollen\_cca\_tave$CCA$eig)  
View(arctic\_pollen\_cca\_tmin$CCA$eig)

Maximum temperature explains the most variance

July and January variance

#Shared  
arctic\_pollen\_cca\_tjul\_tjan <- cca(X=arctic\_pollen\_sqrt, y=c(arctic.env$tjul,arctic.env$tjan))  
#View(arctic\_pollen\_cca\_tjul\_tjan$CA$eig)  
summary(arctic\_pollen\_cca\_tjul\_tjan)

##   
## Call:  
## cca(X = arctic\_pollen\_sqrt, y = c(arctic.env$tjul, arctic.env$tjan))   
##   
## Partitioning of scaled Chi-square:  
## Inertia Proportion  
## Total 1.141 1  
## Unconstrained 1.141 1  
##   
## Eigenvalues, and their contribution to the scaled Chi-square   
##   
## Importance of components:  
## CA1 CA2 CA3 CA4 CA5 CA6  
## Eigenvalue 0.2517 0.1355 0.07269 0.05593 0.04609 0.03751  
## Proportion Explained 0.2206 0.1188 0.06371 0.04902 0.04040 0.03288  
## Cumulative Proportion 0.2206 0.3393 0.40306 0.45207 0.49247 0.52535  
## CA7 CA8 CA9 CA10 CA11 CA12  
## Eigenvalue 0.03394 0.03300 0.02915 0.02834 0.02616 0.02536  
## Proportion Explained 0.02974 0.02892 0.02555 0.02484 0.02293 0.02222  
## Cumulative Proportion 0.55509 0.58402 0.60957 0.63440 0.65733 0.67956  
## CA13 CA14 CA15 CA16 CA17 CA18  
## Eigenvalue 0.02353 0.02265 0.02099 0.02061 0.01913 0.01863  
## Proportion Explained 0.02063 0.01985 0.01840 0.01807 0.01676 0.01633  
## Cumulative Proportion 0.70018 0.72003 0.73843 0.75650 0.77327 0.78959  
## CA19 CA20 CA21 CA22 CA23 CA24  
## Eigenvalue 0.01800 0.01721 0.01638 0.01584 0.01462 0.01373  
## Proportion Explained 0.01578 0.01508 0.01436 0.01388 0.01281 0.01204  
## Cumulative Proportion 0.80537 0.82045 0.83481 0.84870 0.86151 0.87354  
## CA25 CA26 CA27 CA28 CA29 CA30  
## Eigenvalue 0.01331 0.01285 0.01253 0.01194 0.011322 0.010971  
## Proportion Explained 0.01167 0.01126 0.01098 0.01046 0.009923 0.009616  
## Cumulative Proportion 0.88521 0.89647 0.90745 0.91792 0.927841 0.937456  
## CA31 CA32 CA33 CA34 CA35  
## Eigenvalue 0.010536 0.010103 0.009842 0.009294 0.008643  
## Proportion Explained 0.009234 0.008855 0.008626 0.008145 0.007575  
## Cumulative Proportion 0.946690 0.955545 0.964171 0.972317 0.979891  
## CA36 CA37 CA38  
## Eigenvalue 0.008264 0.007549 0.007129  
## Proportion Explained 0.007243 0.006617 0.006248  
## Cumulative Proportion 0.987135 0.993752 1.000000  
##   
## Scaling 2 for species and site scores  
## \* Species are scaled proportional to eigenvalues  
## \* Sites are unscaled: weighted dispersion equal on all dimensions  
##   
##   
## Species scores  
##   
## CA1 CA2 CA3 CA4 CA5 CA6  
## F.PABI 1.57400 0.99793 -0.002725 2.16897 -0.494603 0.23770  
## F.BALN 0.23665 -0.24955 0.188466 -0.16459 -0.008175 0.01689  
## F.CAMB 0.41461 0.52859 -0.678819 -0.03075 -0.090866 0.01535  
## F.APIA -0.55858 -0.81779 -0.320921 0.51672 1.364881 1.32616  
## F.CART -0.09185 0.10564 -0.131030 -0.27099 -0.102978 0.21127  
## F.TULI -0.09901 -0.08925 -0.170108 -0.09426 -0.082244 0.44432  
## F.BBET 0.15997 -0.27873 0.043190 -0.01096 0.055180 -0.06417  
## F.BRAS -0.92582 0.85373 0.783244 -0.06266 -0.101212 0.45182  
## F.CARY -0.91179 0.46222 0.046807 0.17151 -0.071657 -0.12458  
## F.CHEN 0.32325 0.69698 -0.686331 -0.50842 0.235717 0.24360  
## F.BCOR 0.37113 0.95905 -1.258357 -0.43952 0.608652 0.55746  
## F.CUPR 0.27164 -0.33361 -0.270623 -0.13345 1.065505 -0.34047  
## F.CYPE -0.31974 -0.16064 -0.118236 0.03626 -0.148856 0.05682  
## F.RDRY -1.18166 1.11274 0.548593 -0.11020 -0.201578 -0.23189  
## F.ELAE 0.27258 -0.68915 0.567678 -0.68673 0.500273 -0.44734  
## F.ERIC -0.35063 -0.29867 -0.487042 0.15691 -0.222287 -0.28938  
## F.FABA -0.66673 0.24324 -0.243058 -0.09242 -0.602280 -0.29503  
## F.FFAG 1.53287 0.86194 -0.268453 2.41908 0.419175 0.30809  
## F.OFRA 0.80951 0.97949 -1.091808 0.45654 0.242115 0.34003  
## F.PLAR 1.18022 0.56613 -0.256206 0.23957 0.008949 -0.01568  
## F.MMYR 0.78128 0.13787 0.139973 -0.52084 0.449546 -0.32529  
## F.ONAG -0.22559 0.03006 -0.189677 0.01085 -0.439631 -0.17363  
## F.POXR -1.08039 0.84270 0.375310 0.12719 0.231632 -0.13640  
## F.PAPA -1.47463 1.63418 0.784674 -0.04318 0.271347 -0.63317  
## F.PPIC 0.66020 0.12473 0.232899 0.09947 -0.017319 -0.04444  
## F.PPIN 0.44166 0.79491 -0.404220 -0.36565 0.010849 -0.03761  
## F.PPLA -0.61056 0.80027 0.806260 -0.23681 0.568172 0.36514  
## F.POAC -0.44106 -0.19334 -0.060438 0.11873 0.055066 0.22759  
## F.POLE -0.18101 -1.24086 0.362248 0.14317 0.119388 3.73600  
## F.POLY -0.83601 0.06393 -0.389214 0.25122 -0.327976 -0.11499  
## F.SPOP 0.39080 -0.41679 0.459604 -0.31138 0.162840 -0.15869  
## F.FQUE 1.21830 1.07335 -0.994429 0.03202 0.571238 0.64643  
## F.RANU -0.81105 0.05932 0.086689 0.25502 0.530453 0.15346  
## F.ROSA -0.49089 0.01900 0.185172 -0.10349 -0.141892 0.25728  
## F.SSAL -0.49901 0.01228 -0.049242 0.04910 0.110239 -0.22013  
## F.SAXI -1.10631 0.94256 0.517484 -0.08169 -0.149516 -0.01358  
## F.SCRO -1.11882 0.38568 0.228885 0.11737 -0.035997 -0.42163  
## F.RTHA -0.69480 -0.27607 -0.590872 1.08865 2.599358 -0.31906  
## F.ULMA 1.10605 0.94596 -1.255561 -0.29798 0.905836 1.05703  
##   
##   
## Site scores (weighted averages of species scores)  
##   
## CA1 CA2 CA3 CA4 CA5 CA6  
## 1 0.165494 7.126e-01 -0.976421 -1.184770 -0.3707646 0.0199478  
## 2 -0.235258 8.736e-01 -1.419668 0.609068 -1.3270187 0.3377500  
## 3 -0.121352 1.196e+00 -1.320869 -0.567446 -0.8609090 1.2040515  
## 4 0.406856 8.291e-01 -1.608331 0.829726 -1.2334221 -0.0899053  
## 5 -0.026331 6.219e-01 -1.518261 -0.487660 -0.7612807 -0.5802896  
## 6 -0.072478 1.127e+00 -1.898170 -0.753946 -0.5643146 0.2466878  
## 7 -0.158242 3.733e-01 -1.494060 0.139992 -1.3642429 -0.8356484  
## 8 -0.490670 9.681e-01 -0.719585 -0.671486 -0.8259025 -0.4427586  
## 9 -0.188204 2.732e-01 -1.520202 -0.607375 -0.9985404 -0.1389464  
## 10 -0.543562 3.014e-01 -1.016237 -0.179037 -0.6871423 -1.0953884  
## 11 -0.707815 8.946e-01 -1.160045 -0.525208 -0.6228673 0.1654063  
## 12 -0.473423 8.344e-01 -1.542246 -0.611479 -1.2360213 -0.2890211  
## 13 -0.574114 1.484e+00 -1.483368 -1.079232 0.0169768 0.5675612  
## 14 -0.743924 -7.210e-02 -1.417509 0.029320 -0.9272315 -1.6327080  
## 15 -0.248059 2.287e-01 -1.793539 -0.434579 -0.8424834 -0.5138749  
## 16 -0.559757 8.473e-01 -1.502673 -0.320545 -0.8772438 0.4581296  
## 17 -1.103893 1.350e+00 -0.284104 -0.654532 -0.8215274 -1.1111578  
## 18 -0.254647 1.054e+00 -0.814528 0.575707 -0.9357012 0.3168456  
## 19 -0.222909 3.429e-01 -1.267714 -0.586835 -0.4353351 0.2614324  
## 20 -0.979063 9.047e-01 -0.885209 0.102500 -0.6301143 -0.7619458  
## 21 -0.495110 2.577e-01 -1.210924 -0.415450 -0.7954214 -0.3666020  
## 22 -0.634697 7.613e-01 -0.852918 -0.500858 -0.7143500 -0.7799799  
## 23 -1.179730 3.065e-01 -0.321296 0.314712 -0.7187540 -0.5964897  
## 24 -0.837244 -2.763e-01 -1.809429 0.230691 -1.3743442 -1.5976165  
## 25 -1.090337 -2.224e-01 -1.476789 0.648944 -0.8103996 -1.2118751  
## 26 -0.546098 2.560e-01 -1.841677 -0.447721 -1.6128035 -0.6998909  
## 27 -1.192777 -1.241e-01 -1.231531 0.542971 -0.7325586 -1.1699300  
## 28 -0.842241 2.505e-01 -1.421201 -0.197984 -0.0608270 0.3913030  
## 29 -0.713989 7.445e-01 -1.055413 -0.417258 -0.6276861 -0.0321339  
## 30 -0.688786 1.481e-01 -1.599733 -0.157350 -1.5937637 -0.2677564  
## 31 -0.747729 -4.787e-01 -1.203595 0.321852 -0.4733762 -0.2631326  
## 32 -0.961593 3.059e-01 -1.484427 0.173246 -0.7907541 -1.0379538  
## 33 -1.023714 1.278e-01 -1.407782 0.183778 -1.3415655 -1.0147850  
## 34 -0.591263 6.400e-01 -1.366095 -0.586944 -1.3616375 -0.6267682  
## 35 -0.818981 3.967e-01 -1.247487 -0.307368 -1.0148491 -0.4004335  
## 36 -1.230297 1.879e-01 -1.028477 0.304058 -1.0094773 -0.7835838  
## 37 -1.125626 1.126e+00 -1.368968 -0.039033 -0.3840271 1.5159476  
## 38 -0.718295 -5.372e-01 -0.717134 -0.138448 -0.2889362 -0.2743894  
## 39 -0.840955 -3.194e-01 -0.942007 -0.023131 -0.4144419 -1.1209473  
## 40 -1.045161 -5.896e-01 -0.886824 0.531174 -0.9312387 -1.3064931  
## 41 -0.314460 -1.456e-01 -2.366799 -0.526876 -1.4409352 -0.8623967  
## 42 -1.481610 3.187e-01 -0.846374 0.487275 -0.9706777 -1.5011907  
## 43 -1.328821 2.627e-01 -0.920268 0.795102 -0.5613026 -1.3768696  
## 44 -1.118363 4.063e-01 -1.083366 0.448127 -0.4708197 -1.5662671  
## 45 -1.380322 7.336e-01 -0.893430 0.290616 -0.9153264 -1.1141981  
## 46 -1.850048 5.667e-01 0.190781 0.842244 -1.0488511 -1.9437963  
## 47 -1.819894 5.129e-01 0.028776 0.761855 -0.9192008 -1.3443664  
## 48 -1.711023 7.643e-01 -0.481206 0.517050 -0.7939128 -2.2592299  
## 49 -0.410065 7.815e-01 -1.610721 0.648115 -1.1709644 -0.2525049  
## 50 -1.184598 9.161e-01 -1.052275 -0.090102 -0.6966874 -1.5626651  
## 51 -1.622107 1.176e+00 0.194399 -0.255874 -1.4470880 -1.4544387  
## 52 -1.860478 1.051e+00 0.117367 0.477871 -0.8312505 -0.7134821  
## 53 -1.804679 1.440e+00 -0.375193 0.403061 -0.8599534 -1.6316117  
## 54 -1.430834 1.484e-01 -0.364376 0.571431 -1.3181151 -1.7416405  
## 55 -1.610406 1.226e+00 -0.562043 0.208650 -0.6452747 -1.3670629  
## 56 -1.571731 9.184e-01 -0.566291 0.233313 -1.3001182 -1.4129747  
## 57 -1.613479 -2.512e-01 -1.977646 1.110050 -1.8459546 -2.3781214  
## 58 -1.708189 9.786e-01 -1.060914 0.049930 -2.4380253 -1.6665868  
## 59 -1.529166 1.393e+00 -0.183695 -0.167837 -0.9779738 -1.1361040  
## 60 -0.974451 1.606e+00 -1.271837 -0.860797 -1.3560989 -0.4230694  
## 61 -1.287054 1.002e+00 -0.143925 -0.133031 -0.7803151 -0.9771728  
## 62 -1.263968 1.179e+00 -0.142898 -0.369740 -1.5443948 -0.3956209  
## 63 -1.244615 1.243e+00 -0.397427 -0.501914 -1.2242739 -0.2497660  
## 64 -2.096324 1.400e+00 0.596749 0.543090 0.0622284 -2.1139290  
## 65 -1.915237 1.240e+00 0.573148 0.386577 -0.8734808 -1.8946638  
## 66 -1.029009 1.077e+00 -0.473205 -0.630110 -0.8116374 -0.6760601  
## 67 -1.772224 1.083e+00 0.399667 0.095285 -0.7314889 -0.8510072  
## 68 -1.448694 6.894e-01 -0.995869 0.295648 -1.0385038 -1.2309628  
## 69 -1.673641 1.976e+00 0.110185 -0.575633 -0.6519308 -0.4989226  
## 70 -0.734797 1.097e+00 0.054852 -0.464295 -0.5976113 -0.3321385  
## 71 -0.979841 1.658e+00 0.425206 -0.861036 -0.0416808 -0.2153571  
## 72 -1.094916 1.440e+00 -0.135503 -0.549383 -1.2004474 -0.7584086  
## 73 -0.742221 2.037e+00 0.130623 -1.144428 -0.3506119 -0.3306207  
## 74 -1.102325 1.422e+00 -0.183431 -0.071932 0.4379934 -0.7125897  
## 75 -0.699315 1.437e+00 0.801950 -0.491940 -0.8113781 0.2888893  
## 76 -1.105933 1.672e+00 0.786636 0.050998 1.0870132 -0.4875361  
## 77 -0.333733 1.365e+00 -0.142208 -0.676936 -0.1386974 1.0104191  
## 78 -0.828018 1.148e+00 0.851721 -0.402561 -0.3117146 0.7863995  
## 79 -0.571662 1.542e+00 0.491812 -1.128395 0.1307423 -0.2180406  
## 80 -0.785820 2.109e+00 0.904716 -1.349236 -0.4549504 -0.1999131  
## 81 -1.163405 1.110e+00 0.743069 0.338364 1.2458652 0.4934597  
## 82 -1.121411 1.638e+00 0.844625 -0.399451 -0.1636268 -0.1423400  
## 83 -1.022827 1.394e+00 0.685161 -0.183253 -0.5017104 1.1791497  
## 84 -0.756092 1.501e+00 0.386196 -0.570604 0.3891481 0.7241674  
## 85 -1.713210 2.269e+00 1.386841 -0.103193 0.1277539 -0.1016949  
## 86 -0.780464 1.771e+00 1.081299 -0.235551 0.6197724 0.5518820  
## 87 -0.736626 1.385e+00 0.343238 -0.246078 -0.0912073 0.2149310  
## 88 -0.705771 4.616e-01 0.656942 -0.100572 -0.0476830 -0.2891690  
## 89 -0.361989 9.209e-01 -0.044775 -0.385304 0.8707401 0.5013641  
## 90 -0.419419 1.084e+00 0.258314 -1.004544 -0.7560686 0.1092788  
## 91 -1.694681 2.222e+00 0.988552 -0.160132 0.3894273 -0.3129973  
## 92 -1.861477 2.421e+00 2.022355 -0.088301 -0.1735696 0.2570845  
## 93 -0.478117 1.212e+00 0.680883 -0.153257 0.1615181 0.5913086  
## 94 -0.734874 1.144e+00 0.478191 -0.309217 -0.2591862 0.8698795  
## 95 -0.745870 1.620e+00 0.482223 -0.913669 0.3353210 -0.2560960  
## 96 -0.969682 9.699e-01 0.991186 -0.086961 -0.0074988 0.4145421  
## 97 -1.815952 1.803e+00 1.542508 0.446761 0.9881644 0.1376003  
## 98 -1.039392 2.120e+00 0.405883 -0.615240 0.5357291 -0.4968401  
## 99 -1.110635 1.863e+00 0.523118 -0.432688 0.7766422 -0.6822827  
## 100 -1.269262 1.163e+00 0.827847 0.747246 1.3926046 1.5343164  
## 101 -1.570901 2.942e+00 1.994028 -0.591057 1.1424186 -0.5929756  
## 102 -1.110560 2.669e+00 1.919091 -0.798407 0.8989142 -0.2161169  
## 103 -1.073344 1.731e+00 1.162439 -0.237671 0.8516985 -0.0972607  
## 104 -1.744114 1.043e+00 0.195226 0.852329 0.2852291 -1.7000155  
## 105 -1.834560 1.459e+00 0.533648 0.500895 0.7124392 -0.6188762  
## 106 -2.916752 3.111e+00 2.937168 0.563959 1.4081906 -1.3688237  
## 107 -2.431270 2.115e+00 1.598607 0.618433 0.9084092 -1.3181775  
## 108 -2.450177 1.859e+00 1.730692 0.571465 0.1137458 -1.4967949  
## 109 -1.982288 1.255e+00 1.060664 0.566589 0.2951001 -1.0120894  
## 110 -2.353771 1.967e+00 1.765322 0.712710 0.3129541 -0.9941252  
## 111 -1.604212 2.116e+00 0.980023 -0.068257 1.8361670 -1.0649466  
## 112 -2.227592 9.451e-01 0.842215 1.479655 1.8273108 -0.5453310  
## 113 -2.445733 1.784e+00 0.978033 1.728694 3.4329140 -1.9806171  
## 114 -1.885109 1.125e+00 0.448370 0.800796 0.5208561 -1.1996820  
## 115 -0.304786 -6.771e-01 -1.111305 0.342633 -1.3402831 -0.4078100  
## 116 0.276037 -9.352e-02 -1.010578 -0.491746 -0.2800203 -0.1375273  
## 117 0.532566 -2.107e-01 -0.188734 -0.754715 -0.5577243 -0.1845483  
## 118 -0.862861 3.039e-01 -0.767385 0.045147 -0.3876216 0.3232966  
## 119 -0.435486 -7.399e-01 -2.652552 0.500985 -1.4523670 -1.8244253  
## 120 -0.628903 -7.919e-01 -2.679074 0.680855 -1.4112184 -1.9418979  
## 121 -0.721362 -6.732e-01 -1.975588 0.916805 1.2078850 -0.9735306  
## 122 -0.691385 -1.318e+00 -1.790965 0.947346 -0.5590411 -0.9019728  
## 123 -0.587007 -1.055e+00 -1.475683 0.690105 -0.6186689 -1.1073035  
## 124 -0.540306 -8.491e-01 -1.487622 0.302053 -0.7758494 -1.9883868  
## 125 -0.609092 -8.569e-01 -2.134990 1.143177 0.4513076 -1.5763542  
## 126 -0.648911 -1.145e+00 -1.297794 0.613263 -0.8258394 -2.0311113  
## 127 -0.586304 -7.817e-01 -2.177911 1.064233 0.4489687 -1.5659504  
## 128 -1.086490 -6.228e-01 -1.701935 0.738008 -0.1279113 -1.0475998  
## 129 -0.700766 -1.169e+00 -1.640537 0.851321 0.4040557 -1.0087384  
## 131 -0.817993 -1.207e+00 -1.759061 0.768499 -0.5602274 -1.8312796  
## 132 -0.700740 -9.261e-01 -1.657957 1.057453 1.2103023 -0.9351955  
## 133 -0.619301 -1.127e+00 -1.399432 0.590239 -0.8249257 -0.5718501  
## 134 -1.092201 -9.757e-01 -2.621472 0.998638 -1.2490308 -1.0187360  
## 135 -1.240230 -6.321e-01 -1.530068 1.066262 -0.5090467 0.1865957  
## 136 -0.532587 -1.158e+00 -1.685694 0.545755 -0.3409934 -1.6020624  
## 137 -0.608271 -1.054e+00 -1.239365 0.589161 -0.1583003 -1.2937228  
## 138 -0.911803 -1.336e+00 -1.699477 1.392317 0.6894490 -1.6398338  
## 139 -0.854260 -1.042e+00 -1.024198 0.961262 1.9128825 -0.7427562  
## 140 -0.917817 -1.263e+00 -1.177664 1.335837 3.1679257 0.8709330  
## 141 -0.681111 -8.776e-01 -1.468850 1.142167 2.0963366 -1.3139312  
## 142 -1.252514 -1.119e+00 -1.642584 2.273953 2.6571602 -1.2951990  
## 143 -0.790303 -8.948e-01 -1.465334 1.043141 1.4804049 -0.4234351  
## 144 -0.589399 -1.075e+00 -1.670309 1.007508 1.6382935 -1.7594195  
## 145 -0.864990 -1.087e+00 -0.801909 1.473346 3.5648434 -1.3683265  
## 146 -1.116167 -9.460e-01 -1.499122 1.976778 3.3780558 -0.3998500  
## 147 -0.840555 -2.396e-01 -0.657398 0.342715 -0.0669306 -1.2720313  
## 148 -0.669566 -1.842e-01 -0.994770 0.050147 -0.2107077 -0.9695371  
## 149 -0.856433 3.917e-01 -0.469891 0.261621 1.0100921 -0.9460630  
## 150 -0.774295 -7.978e-02 -0.958327 0.356343 0.4562570 -0.8755773  
## 151 -1.412415 -3.700e-01 -0.559303 1.836834 6.1071839 0.8196041  
## 152 -1.490426 -5.367e-01 -0.491187 2.063725 6.2154016 0.7504211  
## 153 -1.571068 -5.061e-01 -1.016987 3.159217 9.1604061 0.3476854  
## 154 -1.444994 -6.809e-01 -1.323966 2.830767 6.6079499 0.3140128  
## 155 -0.848455 -3.739e-01 -1.624224 0.242966 -1.1747595 -0.7665949  
## 156 -0.966850 -1.986e-01 -0.883398 0.206656 0.0293895 0.5212002  
## 157 -0.712609 1.889e-01 -1.575327 0.280872 0.2514703 0.5877930  
## 158 -1.186080 -1.242e-01 -0.969511 0.505731 -0.7478296 0.1401328  
## 159 -0.561387 -1.045e+00 -0.363338 -0.104258 1.2560455 -1.7417479  
## 160 -0.483704 -1.020e+00 -0.676982 0.007078 1.0696268 -1.5630079  
## 161 -0.462893 -1.064e+00 -0.614698 0.036840 1.8990052 -1.6547851  
## 162 -0.450300 -6.376e-02 -1.613794 -0.431035 0.9083600 0.4585062  
## 163 -0.761890 -6.535e-01 -1.902080 0.799815 1.0885646 -1.0731163  
## 164 -0.435589 -1.252e+00 -0.801987 0.721690 3.6704094 -2.2301769  
## 165 -0.625450 -1.371e+00 -0.829583 0.607943 1.5801523 -1.4395049  
## 166 -0.604455 -8.376e-01 -1.466374 0.816483 1.3676566 -1.1243715  
## 167 -0.720781 -8.561e-01 -1.060218 0.952466 3.3114735 -1.1200583  
## 168 -0.829908 -7.967e-01 -1.289736 0.498809 -0.6371442 -0.2292921  
## 169 -1.558518 -8.285e-01 -0.606878 1.483212 0.5962579 2.1741053  
## 170 -1.852210 9.414e-02 -0.390064 2.459595 4.4951344 -1.4599738  
## 171 -2.094289 3.396e-01 -0.586151 2.838845 5.5699683 -2.3958467  
## 172 -1.483277 -2.064e-01 -0.180020 0.995516 0.0130551 -1.4649917  
## 173 -1.815554 4.000e-02 -1.638608 2.288303 2.5431896 -2.4656957  
## 174 -2.055220 8.753e-01 0.281531 1.664700 1.4044542 -1.5516397  
## 175 -1.385304 -5.483e-01 -2.001314 0.980376 -1.3693255 -2.9814934  
## 176 -1.115090 -4.166e-01 -2.086822 0.755844 -1.0606306 -1.5385612  
## 177 -2.533719 1.572e+00 1.805086 0.629217 -0.0569397 0.9999498  
## 178 -0.004122 -9.341e-01 0.596514 -0.507648 -0.2592042 -0.4705591  
## 179 -1.020272 -7.906e-01 -0.014935 0.692348 0.6176876 2.5501974  
## 180 -0.893004 -4.222e-01 0.869557 -0.110443 -0.2436935 0.7020246  
## 181 -0.481311 -8.091e-01 -0.204282 -0.233738 -0.9102044 1.1437476  
## 182 -0.713601 -1.217e+00 -0.447240 0.626964 -1.1142411 3.3305728  
## 183 -0.714441 -1.509e+00 -0.951759 0.635385 -0.6061932 2.4479922  
## 184 -0.745856 -1.310e+00 -0.824561 0.517533 -0.8368190 1.2473686  
## 185 -0.687120 -7.580e-01 -0.637809 0.013958 -0.9323653 0.6765935  
## 186 -0.619975 -1.254e+00 -0.795896 0.414618 -1.0561923 1.0182943  
## 187 -0.535024 -1.194e+00 -0.091535 0.472856 -0.4246290 0.9368404  
## 188 -0.512929 -8.615e-01 -0.627734 0.154670 -1.0419126 0.3940562  
## 189 -0.985700 -1.360e+00 -1.211345 1.238141 0.0545698 1.8950383  
## 190 -0.625220 -1.158e+00 -0.433762 0.776345 0.6169633 -0.4226306  
## 191 -0.843775 -9.027e-01 -0.255661 0.429493 -0.2962619 1.5545357  
## 192 -0.874210 -5.542e-01 -0.093866 0.321519 -0.9718576 0.0040693  
## 193 -0.604154 -1.191e+00 -0.738154 0.196707 -1.2068168 0.0744643  
## 194 -0.682705 -1.056e+00 -0.484628 0.356229 -0.9406283 0.4267533  
## 195 -0.540884 -7.967e-01 -0.294935 0.370956 0.8160726 0.9897325  
## 196 -0.554422 -1.261e+00 -0.545071 0.396293 0.0022235 1.3329693  
## 197 -1.055097 -3.635e-01 0.158119 0.451602 -0.6578205 -0.1566640  
## 198 -0.598376 -8.136e-01 -0.270671 0.122833 -0.5599161 0.9106046  
## 199 -0.722143 -1.160e+00 -0.510852 0.457251 -0.9449341 0.6717952  
## 200 -0.644708 -9.003e-01 -0.116963 0.433650 -0.5752432 0.5594282  
## 201 -0.895300 -8.704e-01 -0.516685 0.722393 0.2492997 -0.0699024  
## 202 -0.927852 -7.212e-01 -0.284190 0.358076 -1.1819400 -0.3308168  
## 203 -0.864288 -7.857e-01 -0.523567 0.477479 -0.9379876 0.0513729  
## 204 -0.601424 -8.655e-01 0.042409 0.038230 -0.7061581 1.1017909  
## 205 -0.756306 -1.063e+00 -0.777685 0.585256 -1.4800653 0.5053741  
## 206 -0.448103 -7.195e-01 -0.169542 -0.328058 -0.2451662 0.2222855  
## 207 -0.643984 -1.112e+00 -0.286375 0.021262 -0.4532528 0.1539192  
## 208 -0.840061 -1.289e+00 -0.616143 0.680075 -0.4260863 2.3952259  
## 209 -0.732854 -7.679e-01 -0.645555 0.327628 0.2578827 0.4042860  
## 210 -0.696972 -1.195e+00 -0.634892 0.445283 -0.5400805 0.7979177  
## 211 -0.804090 -1.195e+00 -0.818015 0.505035 -0.6117801 0.6467257  
## 212 -0.804258 -1.512e+00 -1.068077 0.656426 -0.7595385 -0.0586126  
## 213 -1.033039 -8.069e-01 -0.344282 0.667978 -0.6691428 1.1016525  
## 214 -0.738317 -1.256e+00 -0.707436 0.583624 -0.5542826 1.8834831  
## 215 -0.993766 -8.401e-01 -0.595572 0.522507 -0.5974223 1.4389423  
## 216 -0.828095 -1.075e+00 -0.479541 0.406284 -0.6674839 1.0150519  
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## 219 -1.004474 -6.287e-01 -0.642770 0.393495 -0.5758164 1.9084044  
## 220 -0.760602 1.074e+00 1.817475 -0.923551 -0.0022819 0.4927891  
## 221 -0.708652 8.945e-01 1.763207 -0.552700 -0.0164851 -0.2713301  
## 222 -0.513057 6.633e-01 1.114835 -0.631338 -0.1611366 0.1572568  
## 223 -0.525884 8.820e-01 1.264071 -0.745127 -0.0778829 0.4003066  
## 224 -0.844824 1.018e+00 1.498420 -0.180415 0.4426910 0.2502715  
## 225 -0.640342 8.193e-01 1.285496 -0.577285 -0.0899081 -0.1800085  
## 226 -0.304235 4.785e-01 -0.073776 -0.807130 -1.0122507 1.3582901  
## 227 -0.881329 1.184e+00 1.092554 -0.363991 0.3081280 0.6172040  
## 228 -0.839040 1.468e+00 0.993631 -0.656995 -0.6141574 0.6671164  
## 229 -0.983593 1.325e+00 1.422479 -0.694483 -0.5968630 1.3187222  
## 230 -0.717228 1.346e+00 1.607803 -0.768218 -0.7157627 1.2015613  
## 231 -0.503635 1.011e+00 1.238343 -0.698057 -0.2707071 0.7095676  
## 232 -0.676954 7.654e-01 1.584516 -0.384336 -0.1613728 1.2397253  
## 233 -0.592655 6.887e-01 1.091505 -0.498755 0.0441673 0.6544159  
## 234 -0.864797 1.217e+00 1.345056 -0.569125 -0.1194868 0.4939476  
## 235 -0.905780 1.193e+00 1.314166 -0.429355 -0.4740593 1.5715679  
## 236 -1.291294 1.038e+00 1.424503 -0.262444 0.0376101 1.0695697  
## 237 -1.310808 1.387e+00 1.985016 -0.420645 0.3624766 1.2254532  
## 238 -1.199283 1.069e+00 1.509034 -0.272740 -0.7209147 0.9036544  
## 239 -1.521535 1.604e+00 2.064789 -0.269125 -0.2215804 0.6036411  
## 240 -1.439387 1.584e+00 2.132574 -0.485742 -0.1353073 1.6490919  
## 241 -1.492583 1.596e+00 1.749321 -0.276181 -0.5248106 1.2398834  
## 242 -1.496552 1.483e+00 2.149894 -0.388943 -0.4996812 1.3475382  
## 243 -1.182489 1.295e+00 1.301107 -0.235577 -0.5668436 1.0143023  
## 244 -1.317934 1.287e+00 1.397109 0.115503 0.4482960 1.2661485  
## 245 -1.502724 1.603e+00 1.734260 -0.264518 -0.5376806 1.0005532  
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## 248 -1.256879 8.524e-01 1.123697 0.039594 -0.3339723 1.6191771  
## 249 -1.283300 8.647e-01 1.353676 -0.029123 -0.1382488 1.7150543  
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## 252 -1.201025 6.064e-01 1.115595 0.197684 0.2638617 2.3136987  
## 253 -1.602979 1.149e+00 1.461165 0.429283 0.4034959 0.0270393  
## 254 -1.599825 1.250e+00 1.742754 0.303951 0.2048745 1.0994407  
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## 265 1.725125 7.044e-01 0.188279 2.704980 -1.0713209 -0.6680705  
## 266 1.682316 7.505e-01 -0.473727 2.862615 -0.6316890 0.2100618  
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## 269 1.359193 3.466e-01 0.016444 3.236531 0.1142902 -0.3775800  
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## 294 1.627369 7.466e-01 -0.009307 1.822211 -0.2245906 0.3404199  
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## 357 1.716894 7.469e-01 0.544594 0.940557 -0.3464106 -0.0001158  
## 358 1.075619 5.236e-02 0.083787 -0.091340 0.1846792 -0.3310405  
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## 367 1.187921 6.475e-01 -0.396484 -0.208494 0.2314010 -0.2501585  
## 368 1.378098 3.081e-01 0.414301 0.751305 1.6059828 0.0840328  
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## 373 1.394407 5.997e-01 -0.515288 -0.889839 0.7257582 0.7936293  
## 374 1.332292 4.748e-01 -0.340690 -1.143902 0.9111530 -0.6814056  
## 375 1.302822 4.209e-01 -0.317879 -0.486409 0.6621571 -0.0999891  
## 376 1.376655 4.421e-01 -0.280285 0.094093 0.6665945 0.0709059  
## 377 1.394368 7.009e-01 -0.215561 -0.205853 0.4239413 -0.5674094  
## 378 1.265882 2.238e-01 -0.050360 -0.987350 0.4743574 -0.3322190  
## 379 0.815873 2.300e-01 -0.569856 -1.147302 -0.4258636 0.0017226  
## 380 0.924228 3.558e-01 -0.544027 -1.128153 -0.4002602 -0.0625040  
## 381 0.699692 -3.267e-01 0.162724 -1.294860 -0.4359683 -0.1646894  
## 382 0.757582 -7.241e-02 -0.064266 -0.987808 -0.4069948 0.1811103  
## 383 0.669008 -1.551e-01 -0.027100 -1.134979 -0.4966595 0.1671983  
## 384 1.099711 6.677e-02 -0.449219 -0.976789 1.1401288 0.5508526  
## 385 0.989982 -1.132e-01 -0.273445 -0.565803 0.3859710 0.0130673  
## 386 1.102002 3.598e-01 -0.189230 -1.424158 1.4394813 0.5889066  
## 387 1.060509 3.414e-01 -0.832915 -0.797623 0.4694168 0.2411816  
## 388 1.097468 3.716e-01 -0.956259 -1.224462 1.2644436 0.2939855  
## 389 1.288222 6.935e-01 -0.002718 -0.365831 0.0413391 -0.5913692  
## 390 1.193899 5.750e-01 -0.789734 -0.606670 0.2979840 0.4407086  
## 391 1.221611 -5.830e-02 0.004714 -0.255652 0.9529446 -0.1793998  
## 392 1.551255 6.470e-01 -0.513360 -0.347935 0.8512080 0.5716311  
## 393 0.765977 -1.682e-01 0.566749 -0.717717 0.8568221 -0.4610508  
## 394 1.170147 1.518e-01 -0.354722 -0.070238 0.4610856 0.2088793  
## 395 0.829573 1.052e+00 -2.217166 -1.580960 2.2055723 1.4212421  
## 396 1.053529 1.383e+00 -2.629242 -1.740552 1.5898669 2.4324581  
## 397 0.860477 1.109e+00 -2.265867 -2.043436 1.2658605 2.3011242  
## 398 1.130049 1.550e+00 -2.235466 -2.016082 0.8108721 1.0274365  
## 399 1.427304 1.977e+00 -2.014820 -2.158158 0.5932651 1.1257874  
## 400 1.868284 2.417e+00 -1.934099 -0.259885 0.1733874 0.9269158  
## 401 1.741844 2.436e+00 -2.423203 -0.024795 0.7867913 1.4832016  
## 402 1.555303 2.325e+00 -2.012693 -0.476171 0.1795800 1.0141561  
## 403 1.545863 1.977e+00 -2.202369 -0.304163 1.9103255 1.1864036  
## 404 1.491141 2.828e+00 -2.941643 -1.461350 0.4723994 1.2542308  
## 405 1.935554 2.871e+00 -2.451283 -0.733514 0.0465703 1.1135471  
## 406 1.754881 2.666e+00 -2.496517 -1.094066 0.6407096 1.4899532  
## 407 1.396663 2.331e+00 -2.425936 -0.914690 0.5293530 1.5604488  
## 408 1.263092 2.227e+00 -2.321229 -2.712410 0.4889745 0.6812908  
## 409 1.323951 1.881e+00 -1.689064 0.100511 1.2049658 0.8225488  
## 410 0.686290 8.056e-01 -1.964705 -1.300673 2.8753175 2.3680385  
## 411 1.004688 1.675e+00 -2.479540 -1.510559 2.2600869 1.6975694  
## 412 0.898573 9.713e-01 -1.005158 -2.047857 0.8890067 0.4566799  
## 413 1.274810 1.840e+00 -1.585414 -2.425742 0.3611249 0.1857541  
## 414 1.568225 2.430e+00 -1.863725 -2.601909 0.6912075 -0.4362168  
## 415 1.414219 1.877e+00 -1.052091 -0.370512 0.1119961 0.1074169  
## 416 0.891115 1.132e+00 -0.531284 -2.032339 -0.1134732 -0.4182799  
## 417 1.094258 1.704e+00 -1.853136 -3.048002 -0.2556709 -0.4333155  
## 418 0.786554 6.463e-01 -0.022871 -1.538823 1.4000069 0.0748073  
## 419 0.454074 6.104e-01 -0.200331 -1.261868 0.3225988 -0.6777271  
## 420 1.137793 3.875e-01 -0.029395 -2.398848 0.1658995 -0.4079480  
## 421 1.253772 9.596e-01 -0.379259 -1.073029 1.3328856 -0.5561039  
## 422 1.024810 1.049e+00 -0.317796 -0.045054 -0.7185914 -0.9101218  
## 423 1.366371 1.207e+00 -0.709257 -1.723502 0.4888471 -1.0731124  
## 424 0.777438 4.532e-01 -0.383342 -1.771197 -0.7376889 0.2278477  
## 425 1.217541 1.402e+00 -0.527989 -1.419350 -0.6274948 -0.9764621  
## 426 0.167739 -1.143e+00 0.524167 -0.487361 -0.3972512 -0.2391762  
## 427 0.636522 -8.365e-01 1.329771 -0.307379 0.1161941 -0.5196155  
## 428 0.682801 4.755e-01 -1.368826 -0.186377 -0.5078884 -0.8457251  
## 429 0.756108 -1.042e+00 1.294482 -0.189325 0.0538043 -0.5717779  
## 430 1.840552 1.629e+00 0.264512 1.456272 -0.7196574 -0.6023415  
## 431 1.169674 7.563e-01 -0.113567 -1.689633 0.5714486 -0.7009735  
## 432 1.249883 9.030e-01 0.385910 -1.386482 0.4080310 -0.9426628  
## 433 1.321700 3.270e-01 0.271392 -1.292883 1.0062187 -1.1261342  
## 435 1.223884 8.910e-01 -0.486089 -1.708677 0.5103437 -1.4512236  
## 436 0.090627 -1.159e+00 0.907966 -0.341308 -0.1686845 0.4827214  
## 437 0.772458 -9.523e-01 1.256873 -0.459109 0.3146585 -1.0397307  
## 438 0.724275 -9.923e-01 1.470683 -0.382015 0.1498798 -0.6102581  
## 439 0.782898 -1.375e+00 1.399397 -0.622381 0.2421155 -0.5135426  
## 440 1.006870 7.565e-01 0.354861 -1.469237 -0.0733401 -0.5001831  
## 441 1.064792 -7.165e-01 1.488662 -0.158149 0.1165311 -0.9603603  
## 442 0.931687 7.428e-01 0.088815 -1.512203 0.3674783 -0.8103834  
## 443 0.492005 -5.981e-01 0.957160 -0.032611 -0.2873101 -0.7221108  
## 444 0.319651 -1.093e+00 1.053288 -0.182174 0.0885533 -0.2608518  
## 445 0.849784 -5.529e-01 1.136513 -0.248869 -0.1365419 -0.8539512  
## 446 1.104544 -5.653e-01 1.623405 -0.531601 0.1982535 -0.7388105  
## 447 1.356616 -1.047e+00 2.001852 -0.359442 0.2997583 -0.9198639  
## 448 -0.097998 -6.651e-01 0.560632 0.042440 1.6162386 -0.0408619  
## 449 0.598207 -1.108e+00 0.759560 -0.260262 -0.0530255 -0.8776199  
## 450 0.162298 -7.685e-01 0.370719 0.322318 0.9373901 -0.3236433  
## 451 0.323566 -3.682e-01 0.750801 -0.374801 0.3157687 0.1042749  
## 452 0.337117 -5.349e-01 0.950860 -0.381190 1.8911602 -0.8311168  
## 453 0.365872 -6.974e-01 0.701952 -0.456594 0.2397784 -0.2649922  
## 454 0.329941 -9.489e-01 0.921698 -0.213375 -0.2473952 -0.5977853  
## 455 1.382842 1.128e+00 -0.190405 -1.248756 0.0318357 -1.3062545  
## 456 0.570640 -9.703e-01 1.291607 -0.123219 -0.1897405 -0.5234118  
## 457 0.901148 -9.674e-01 1.381843 0.055429 0.0201528 -0.6862360  
## 458 0.255912 -1.030e+00 0.673478 -0.137768 -0.3401653 -0.1243805  
## 459 0.613183 -1.033e+00 1.149392 -0.394884 -0.2330658 -0.1611877  
## 460 0.993082 -8.458e-01 1.727371 -0.522862 -0.1635821 -0.8321930  
## 461 0.590586 -9.368e-01 0.996519 -0.268719 -0.6807154 -0.7104994  
## 462 0.369952 -9.825e-01 0.954749 -0.148061 -0.2571180 -0.0251729  
## 463 0.678116 -1.088e+00 1.353306 -0.362257 0.0951822 -0.4025985  
## 464 0.457222 -9.045e-01 0.718057 -0.064519 -0.0320079 -1.0170711  
## 465 1.436784 -5.727e-01 1.986084 0.242711 -0.1883899 -0.7567913  
## 466 1.049350 -1.038e+00 1.655411 -0.358188 -0.2244472 -0.5007669  
## 467 1.343874 1.230e+00 -0.320390 -1.191840 -0.3908569 -1.2942536  
## 468 0.508026 -1.089e+00 0.959720 -0.021552 -0.0020626 -0.0917925  
## 469 0.373777 -4.822e-01 0.943036 -0.167788 -0.4527930 0.3050168  
## 470 0.069210 -7.375e-01 1.128210 -0.038097 0.5310557 -0.2032314  
## 471 0.597328 -9.784e-01 1.104374 -0.353611 0.5528598 -0.9371333  
## 472 1.253387 6.322e-01 0.654375 -1.571797 0.4925021 -1.4320402  
## 473 0.487553 -1.071e+00 1.071960 -0.132058 0.1607898 0.0946959  
## 474 1.308523 9.096e-01 0.441306 -0.999113 0.5780669 -1.0924020  
## 475 0.839938 -1.167e+00 1.389713 -0.226594 0.7649267 -0.8882948  
## 476 0.610958 -9.322e-01 1.268678 -0.560900 0.2342233 -0.5930686  
## 477 0.517440 -9.999e-01 1.227206 -0.316072 -0.1104940 -0.3614989  
## 478 1.073819 -7.594e-01 1.647675 0.325972 -0.1327036 2.1474982  
## 479 0.002347 -1.101e+00 0.560178 0.137070 0.7577938 1.0717099  
## 480 0.447924 -5.323e-01 0.769480 -0.053884 0.7032165 -1.1271558  
## 481 0.954166 5.964e-01 -0.609228 -2.398278 0.5655770 -1.7675227  
## 482 0.871787 6.199e-01 0.205023 -1.861545 0.5979078 -1.1482699  
## 483 0.118267 -2.339e-01 0.583658 -0.188665 1.0599381 -0.6461811  
## 484 1.152770 -7.397e-01 1.512085 0.017580 0.2549720 -0.7846600  
## 485 0.918735 -7.318e-01 1.189238 -0.214139 0.0913156 -1.1473608  
## 486 0.607504 -9.802e-01 1.015087 0.179107 0.1458464 -0.7303955  
## 487 0.830818 -5.777e-01 1.306318 0.072089 -0.2389561 -0.3439157  
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## 489 1.287086 6.204e-02 0.410932 -0.849502 0.4121625 -1.6387590  
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## 492 0.778495 -6.041e-01 1.300759 -0.144475 -0.1915834 -0.5203659  
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## 507 0.595799 -9.663e-01 1.016270 -0.105203 0.1671241 -1.1009814  
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## 510 0.452260 -1.036e+00 0.965340 -0.423866 0.0060893 -0.1788907  
## 511 0.349624 -8.674e-01 0.691334 0.143820 -0.7000373 -0.5833943  
## 512 0.557638 -1.076e+00 0.978265 -0.066819 -0.1492226 -0.5355522  
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## 525 0.911930 -1.002e+00 1.691649 -0.271440 0.2748977 -0.9533089  
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## 527 0.516272 -9.086e-01 1.147484 -0.744754 1.0011088 -0.6472344  
## 528 0.635112 -9.352e-01 1.110271 0.085257 -0.3497820 -0.9625317  
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## 530 1.093181 3.067e-01 0.866741 -0.504753 -0.3409188 -1.0138885  
## 531 0.341964 -9.566e-01 1.232562 -0.384258 0.3559249 -0.7587061  
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## 533 -0.286185 -1.158e+00 -0.504527 -0.128315 -0.8799865 0.7090077  
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## 535 0.254084 -1.509e+00 0.390879 -0.080300 -0.3301085 -0.2313126  
## 536 0.179374 -1.079e+00 0.548645 -0.207394 -0.5218809 -0.0369772  
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## 539 0.785522 -1.082e+00 1.273296 -0.131317 0.7469257 -0.7734968  
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## 542 0.561448 -8.870e-01 1.085232 0.190827 -0.1964173 0.0980497  
## 543 0.252480 -7.912e-01 1.159107 -0.189699 -0.4155437 -0.6571546  
## 544 0.213645 -1.213e+00 0.379557 -0.172231 -0.6033291 -0.4113062  
## 545 0.308947 -1.166e+00 0.600830 -0.366779 -0.5056554 -0.7605305  
## 546 -0.022203 -1.123e+00 0.381305 -0.246068 -0.7388436 -0.0701488  
## 547 0.617334 -9.830e-01 1.065685 0.071364 -0.1564806 -0.6471973  
## 548 0.340740 -7.359e-01 0.301729 -0.821247 0.7853217 0.9439500  
## 549 0.454990 -9.601e-01 1.401213 -0.558111 1.1020023 -0.1227700  
## 550 0.455697 -8.263e-01 1.162153 0.073539 0.8938643 -0.4972547  
## 551 0.455386 -9.138e-01 0.789081 -0.147160 0.1114483 0.0513375  
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## 553 0.051843 -9.151e-01 0.960530 -0.768245 -0.0454438 0.3581061  
## 554 0.359448 -1.146e+00 1.310782 -0.756191 0.0016033 -0.1493410  
## 555 0.113847 -1.040e+00 0.803375 -0.685296 0.6089115 -0.1897837  
## 556 0.718589 -1.026e+00 1.202731 -0.137866 -0.2048204 -0.7763967  
## 557 0.444410 -8.497e-01 1.018340 -0.344982 0.4694548 -0.2369872  
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## 560 0.218963 -7.661e-01 0.933029 -0.765287 0.1799622 0.5934117  
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## 568 0.429157 -1.045e+00 1.177201 -0.399825 1.1110211 -0.3230407  
## 569 0.219883 -8.839e-01 0.643385 -0.571073 0.8988447 -0.2833582  
## 570 0.036320 -7.076e-01 0.312382 -0.253111 0.4941914 -0.1738392  
## 571 0.488020 -1.265e+00 1.020374 -0.802871 0.4731399 -0.4262253  
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## 573 0.171772 -1.182e+00 0.241409 -0.609800 0.2226235 -0.4706312  
## 574 0.506940 -1.243e+00 0.731032 -0.232427 0.5599569 -0.8380862  
## 575 0.211165 -8.586e-01 0.430975 -0.045687 -0.4189949 -0.1368061  
## 576 0.337778 -8.726e-01 0.895445 -0.082228 1.1303889 0.1694567  
## 577 0.225213 -1.205e+00 0.463075 -0.530688 0.4792231 -0.4880514  
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## 579 0.395163 -1.184e+00 0.810774 -0.368319 0.3634094 -0.3890272  
## 580 0.598085 -6.970e-01 1.302534 -0.771932 -0.2409061 -0.1159149  
## 581 0.357554 -8.379e-01 1.062153 -0.759909 -0.0104790 -0.6332677  
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## 585 1.179814 2.713e-01 -0.312537 -0.447778 -0.0683284 0.6912432  
## 586 1.410054 -4.451e-02 0.789348 -0.332991 -0.3320650 -0.1136190  
## 587 0.995692 1.248e-01 -0.234566 -0.815226 -0.3641482 -0.0307835  
## 588 0.474869 -4.251e-01 -0.219303 -0.145111 -0.7860591 -0.1487145  
## 589 0.852581 -1.352e-01 0.483462 -0.167962 -0.3497945 0.2483151  
## 590 0.258121 2.972e-01 0.329539 0.324767 -0.1198382 -0.4307801  
## 591 0.785791 -6.918e-02 0.142500 -0.902842 -0.1546654 -0.3687229  
## 592 1.252925 9.404e-02 0.164847 0.837356 -0.6302012 0.6532197  
## 593 0.683851 -5.394e-01 0.526660 -0.485407 -0.1115225 0.0013207  
## 594 0.283780 -6.652e-02 0.481581 -0.156159 -0.5324895 -0.0110512  
## 595 0.604765 4.257e-01 0.017187 0.345182 -0.9361766 0.1417319  
## 596 0.416530 1.021e-01 -0.400712 -0.516631 -0.6515080 0.5223362  
## 597 0.490638 -1.728e-01 -0.517247 -0.392642 -0.0454324 0.3406150  
## 598 0.675534 5.430e-02 -0.475818 -0.603097 -0.5896125 -0.0170982  
## 599 0.395931 2.684e-01 0.453095 -0.477254 -0.9072182 0.6714533  
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## 601 0.948777 -5.089e-01 0.329003 -0.401358 -0.0710992 -0.8418808  
## 602 0.694409 6.850e-02 -0.137892 0.751930 -0.6612138 0.1220277  
## 603 0.664344 -2.571e-01 0.224053 0.712171 -0.8005070 -0.5028874  
## 604 0.251908 -1.879e-01 -0.081507 -0.504564 -0.7581036 -0.4233568  
## 605 0.367256 -1.030e-01 -0.224681 -0.250154 -0.5477958 -0.2249999  
## 606 0.273320 -2.055e-01 -0.201994 -0.351232 -0.7979206 -0.0894508  
## 607 0.169538 -2.093e-02 -0.145212 -0.211248 -0.7161024 -0.1619516  
## 608 0.288475 1.143e-01 -0.300717 -0.353674 -0.8572333 -0.2278308  
## 609 0.498543 -1.977e-01 -0.505414 -0.761307 -0.6027881 -0.1837932  
## 610 0.193899 -2.731e-01 -0.344971 -0.124904 -0.6069507 -0.9989063  
## 611 0.449313 -4.137e-01 -0.207618 -0.537418 -0.2496064 -0.1747936  
## 612 0.220817 -2.057e-01 -1.003766 0.454296 -0.9063011 -0.2487756  
## 613 0.065629 -5.433e-01 0.155316 -0.515457 -0.9479212 0.1662574  
## 614 0.100961 -9.729e-02 0.415353 0.632571 -0.4391097 0.2926730  
## 615 0.496419 -5.660e-01 -0.322464 -0.680888 -0.6199779 0.3035621  
## 616 0.597820 -4.730e-01 -0.069288 -0.559174 -0.3060545 0.3788862  
## 617 0.041949 -1.475e-01 -0.446370 0.186204 -0.7892017 0.0534836  
## 618 0.555446 2.505e-01 -1.542728 -1.231578 0.0433984 0.7953844  
## 619 0.145141 1.043e+00 -1.033187 -0.115788 -0.6046793 0.3612509  
## 620 0.862248 -2.182e-01 0.170213 -0.709896 0.5392918 -0.6982078  
## 621 0.545623 1.043e-02 -1.162517 -0.367714 1.6140011 0.9026028  
## 622 0.529874 4.758e-01 -1.401520 -0.886802 0.5211696 0.5556063  
## 623 0.252185 -2.555e-01 -0.916284 -0.616088 -0.0933942 0.7678327  
## 624 0.292442 -7.469e-02 -0.972454 -0.556512 0.0746283 0.9952505  
## 625 0.761563 2.245e-01 -1.004365 -0.901616 0.3117301 0.6825924  
## 626 0.330432 2.540e-01 -0.986889 -0.623588 0.0881911 0.9561482  
## 627 0.959860 -3.244e-01 0.105735 -0.231352 0.0006589 -1.2285263  
## 628 0.960575 -1.953e-01 0.112542 -0.460675 -0.0703403 -0.2603067  
## 629 0.529817 -3.151e-01 -0.231520 -0.239142 -0.1172826 0.1403633  
## 630 0.682373 -5.536e-01 0.014037 -0.419028 -0.4899873 0.0369902  
## 631 0.670698 -3.792e-01 -0.292747 -0.513473 -0.4695607 0.0842062  
## 632 0.654919 -1.847e-01 -1.171783 0.478841 1.1012388 -0.1111515  
## 633 0.462504 -2.467e-01 -1.272139 -0.722678 0.2441745 -0.2169297  
## 634 0.505438 -2.123e-01 -0.334893 -0.507432 -0.2115245 0.0046978  
## 635 0.459798 -4.381e-01 -0.286870 -0.335115 -0.3094451 -0.5756889  
## 636 0.868299 -4.222e-01 0.017417 -0.618539 0.4564015 -0.8775227  
## 637 0.881693 -1.906e-01 0.131431 0.199235 -0.7348436 -0.7629462  
## 638 0.715146 -3.933e-01 -0.126146 -0.115922 -0.3641973 -0.6843186  
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## 640 0.478917 -3.633e-01 -0.451718 -0.748155 -0.3644263 -0.2609306  
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## 649 0.324856 -4.642e-01 -0.799101 -0.280297 -0.3063598 -0.4596768  
## 650 0.372607 -2.373e-01 -0.914098 -0.824787 0.6879073 -0.2208021  
## 651 0.225048 -7.228e-01 -0.373682 -0.289600 -0.0848405 -0.6556491  
## 652 0.536976 -4.462e-01 -0.202848 -0.448507 -0.4684130 -0.4742786  
## 653 0.489253 2.543e-01 -1.128886 -0.999340 -0.4800692 0.4776153  
## 654 0.394589 -5.133e-01 -0.494054 -0.490813 -0.0319006 -0.8734825  
## 655 0.365077 -5.630e-01 -0.918285 -0.493459 -0.7419780 -0.4081326  
## 656 0.249546 -4.019e-01 -0.596992 -0.326749 -0.5256973 -0.7568048  
## 657 -0.045747 -6.042e-01 -0.847446 0.057815 -0.7772238 0.0964632  
## 658 0.315091 -4.145e-01 -0.595755 -0.547817 -0.2972889 -0.2073688  
## 659 -0.451063 2.565e-01 -0.864900 -0.592878 -0.3539558 -0.6007108  
## 660 -0.311055 -1.225e+00 -0.138308 -0.021299 -0.3431509 0.1168666  
## 661 -0.939603 -8.808e-01 -1.135675 0.425125 -0.9939835 1.1783647  
## 662 -1.059466 -7.831e-01 -1.123296 0.532079 -1.5035498 1.0450773  
## 663 -0.760537 -1.128e+00 -0.725650 0.369846 -0.9725716 1.4475792  
## 664 -0.408308 -1.655e+00 -0.769247 0.001594 -1.0506324 0.7586873  
## 665 -1.024780 -9.614e-01 -0.988310 0.415938 -1.2062972 1.6522698  
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## 667 -0.870676 -1.051e+00 -0.664377 0.457150 -0.8198765 0.9363222  
## 668 -0.719937 -9.916e-01 -0.889095 0.278655 -1.0038215 1.3653942  
## 669 -0.681451 -9.665e-01 -0.924338 0.224510 -1.2748639 0.8325177  
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## 673 -0.253860 -1.065e+00 0.081711 -0.125221 -0.2682894 0.6866153  
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## 682 0.385036 -1.215e+00 0.756913 -0.854001 -0.3490757 -0.5278348  
## 683 0.389496 -1.210e+00 0.892132 -0.832947 -0.3875445 -0.3137536  
## 684 -0.150546 -7.633e-01 0.358183 -0.289948 1.7864507 -0.5722879  
## 685 0.104660 -1.318e+00 0.562215 -0.993354 -0.4838836 -0.1965242  
## 686 -0.339147 -8.150e-01 -0.231089 -0.207849 -0.7007899 -0.4013222  
## 687 -0.186017 -1.156e+00 0.189620 -0.181068 -0.7263877 -0.1976986  
## 688 -1.095407 -8.893e-01 -0.514941 0.335395 -0.6733680 0.9209264  
## 689 -0.698515 -1.351e+00 -0.920662 1.006918 1.5699213 0.8647477  
## 690 -0.540706 -7.389e-01 0.061292 0.324661 -0.4721924 -0.2204196  
## 691 0.070278 -1.060e+00 0.508522 -0.488542 -0.4211184 0.4990513  
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## 694 -0.667397 -1.092e+00 -0.717542 0.318134 -0.8746762 0.6186127  
## 695 0.259286 -1.033e+00 0.799310 -0.199280 0.9465466 -0.5980671  
## 696 -0.098037 -1.194e+00 0.626638 -0.787931 0.2648941 -0.6338195  
## 697 -0.234713 -1.084e+00 0.062851 -0.362427 -0.4368747 0.2649742  
## 698 0.022977 -1.123e+00 -0.051776 -0.182393 -0.6116671 -0.5087350  
## 699 -0.666370 -1.172e+00 -0.461197 0.802676 0.5153693 -0.3517128  
## 700 -0.388728 -8.309e-01 0.051041 -0.079145 0.1932884 -0.2628033  
## 701 -0.327880 -7.222e-01 0.341914 -0.172562 -0.5450763 0.4535277  
## 702 0.361329 -1.063e+00 0.773611 -0.014701 -0.6052679 -0.3147149  
## 703 0.311625 -1.022e+00 0.467799 0.274632 -0.5915552 -0.0775746  
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## 706 -0.384652 -6.200e-01 0.664830 0.014970 -0.6758816 1.0468748  
## 707 -0.393686 -5.739e-01 0.594418 -0.006503 0.2694578 -0.1114413  
## 708 0.179692 -1.457e+00 0.509040 -0.432586 2.6394652 -1.6400390  
## 709 0.246385 -1.036e+00 0.825617 -0.168340 0.0298861 -0.5574374  
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## 717 0.130693 -1.273e+00 0.469821 -0.516180 0.6024937 -1.0702839  
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## 722 -0.638982 -1.208e+00 -0.607676 0.736678 1.0962171 0.3151340  
## 723 -0.307174 -1.139e+00 -0.160358 -0.443917 -0.6557247 0.7152834  
## 724 -0.460024 -1.009e+00 -0.684568 -0.008539 -0.6222459 1.1663951  
## 725 -0.816733 -6.506e-01 -0.565177 0.167200 -1.5677749 -0.0552282  
## 726 -0.737641 -8.349e-01 -0.866666 0.827617 -0.0099920 0.3852164  
## 727 -0.573151 -8.651e-01 -0.503118 0.254987 -0.6919088 -0.0248263  
## 728 -0.670915 -8.816e-01 -0.269500 -0.045243 -0.3503138 0.1935985  
## 729 -0.652307 -1.202e+00 -0.708747 0.288182 -1.1383722 0.6282185  
## 730 -0.691366 -1.206e+00 -0.595010 0.419895 -0.6883461 1.9989829  
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## 732 -0.829118 -3.493e-01 0.161303 -0.245191 -0.8157545 1.1380692  
## 733 -0.864790 -7.688e-01 -0.301473 0.204751 -0.6457004 1.0492221  
## 734 -0.839904 -6.503e-01 -0.025611 0.146518 -0.6060360 1.1569235  
## 735 -0.845754 -7.661e-01 -0.241081 0.208806 -0.6673129 1.4373769  
## 736 -0.541168 -1.585e+00 -0.185749 0.225163 0.1603380 5.0568539  
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## 738 -0.767565 -1.015e+00 -0.302173 0.096046 -0.5718326 1.4040494  
## 739 -0.177039 -1.232e+00 0.428184 -0.347708 -0.3819786 0.5669036  
## 740 -0.488670 -1.137e+00 0.116948 -0.220599 0.4255731 1.0270263  
## 741 -0.293857 -1.387e+00 -0.225644 0.260291 1.1765192 1.2856671  
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## 744 -0.157932 -1.078e+00 0.462298 -0.017289 0.9481296 1.6239300  
## 745 0.050538 -1.166e+00 0.879306 -1.177398 -0.2737982 1.0940885  
## 746 -0.910730 -1.059e+00 -0.439679 0.822473 0.6797511 2.1372775  
## 747 0.244451 -1.195e+00 1.146587 -0.850519 -0.0013328 0.6503278  
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## 756 -0.671424 -1.473e+00 -0.831982 0.700345 0.2467266 1.7326348  
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## 759 -0.313121 -1.102e+00 0.837354 -0.623124 0.3324164 0.8860390  
## 760 -0.738537 -1.099e+00 -0.535935 0.402914 -0.4442412 1.8087097  
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## 782 0.354087 -7.646e-01 0.687738 -1.027662 -0.3350116 -0.4773674  
## 783 0.315948 -6.609e-01 0.439741 -1.064405 0.4532901 -0.4459533  
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## 792 0.356303 -1.440e+00 0.663294 -1.014966 0.1356018 -0.8482037  
## 793 -0.070250 -8.599e-01 0.483242 -0.382144 0.0348250 0.2517725  
## 794 -0.197960 -5.276e-02 0.499519 -0.677744 0.3739781 -0.2532832  
## 795 -0.153358 -3.039e-01 0.353996 -0.016461 0.2568372 0.5745053  
## 796 -0.280949 3.497e-01 0.589475 -0.774949 -0.2273542 0.1005300  
## 797 0.071974 -2.503e-01 0.326437 -0.620469 -0.1792901 0.3327829  
## 798 -0.203909 3.279e-03 0.695790 -0.696382 0.0778831 0.0772179  
## 799 -0.435347 2.280e-01 0.810318 -0.609309 -0.3213906 0.4748171  
## 800 -0.423206 3.150e-01 1.170469 -0.472831 0.3191469 0.2172195  
## 801 -0.120033 -9.142e-02 0.375948 -0.406254 -0.4715887 0.0951962  
## 802 -0.023646 5.855e-02 0.779872 -0.534918 -0.4065667 0.2521052  
## 803 -0.115988 -6.633e-01 0.130881 -0.594855 -0.0057771 0.3107511  
## 804 -0.243944 -1.609e-01 0.119910 -0.469008 0.0408648 0.6625288  
## 805 -0.427711 4.170e-02 0.639722 -0.459041 -0.1481791 0.1455941  
## 806 -0.702700 1.185e-01 0.692359 -0.146993 -0.0732006 0.7470071  
## 807 0.053564 -7.948e-01 0.158756 -0.579195 -0.2250152 0.0940661  
## 808 0.472201 -8.376e-01 0.699948 -0.761720 -0.2503734 -0.9585778  
## 809 -0.090108 -8.263e-01 0.651458 0.242014 -0.1686368 -0.4352584  
## 810 -0.035860 -8.958e-01 0.216218 -0.568416 -0.0195725 -0.0685039  
## 811 -0.011137 -8.528e-01 -0.052601 -0.387503 -0.7150789 0.0416449  
## 812 0.177303 -7.345e-01 0.160319 0.034693 -0.4738378 -0.2809828  
## 813 -0.179275 -6.006e-01 0.104096 -0.301307 -0.0367711 -0.0187350  
## 814 0.130746 -7.387e-01 -0.062949 -0.649142 -0.3848737 -0.5954916  
## 815 0.262496 -1.062e+00 -0.068377 -0.627956 -0.3320931 -0.6609464  
## 816 -0.249204 -8.955e-01 -0.143270 -0.154479 -0.7947158 -0.2227983  
## 817 -0.047299 -5.665e-01 0.032771 -0.330560 -0.1101755 0.1913301  
## 818 -0.091053 -8.849e-01 0.367920 -0.741302 0.1457261 -0.2318752  
## 819 -0.022126 -6.246e-01 0.055548 -0.396906 -0.0645071 0.0032791  
## 820 -0.168631 -5.000e-01 -0.138876 -0.206722 0.0385897 0.5813263  
## 821 0.331616 -5.621e-01 -0.355877 -0.710550 -0.5028434 -0.7151432  
## 822 -0.083364 -7.924e-01 -0.797374 -0.168002 -0.3754666 -0.3617114  
## 823 -0.171493 -9.661e-01 -0.794455 -0.181654 -0.6444235 -0.5281155  
## 824 -0.233435 -5.549e-01 -0.046240 0.011697 -0.4413786 0.0429994  
## 825 -0.360743 -5.659e-01 -0.085450 -0.269725 -0.0373090 0.3567534  
## 826 -0.511148 -3.201e-01 0.697973 -0.466181 0.0258290 -0.0270116  
## 827 0.011749 -7.522e-01 -0.288280 -0.417266 -0.6234178 -0.3303384  
## 828 -0.048015 -5.534e-01 -0.055602 -0.647135 0.0888215 0.1566233  
## 829 -0.324143 -1.891e-01 -0.788289 -0.490212 -0.2397449 0.9104538  
## 830 0.165863 -7.509e-01 0.258724 -0.808596 -0.2627258 -0.5338350  
## 831 -0.151699 -6.934e-01 -0.470748 -0.146187 -0.7993501 0.0333506

#July variance  
arctic\_pollen\_cca\_tjul <- cca(arctic\_pollen\_sqrt ~ arctic.env$tjul)  
summary(arctic\_pollen\_cca\_tjul)

##   
## Call:  
## cca(formula = arctic\_pollen\_sqrt ~ arctic.env$tjul)   
##   
## Partitioning of scaled Chi-square:  
## Inertia Proportion  
## Total 1.141 1.0000  
## Constrained 0.153 0.1341  
## Unconstrained 0.988 0.8659  
##   
## Eigenvalues, and their contribution to the scaled Chi-square   
##   
## Importance of components:  
## CCA1 CA1 CA2 CA3 CA4 CA5  
## Eigenvalue 0.1530 0.1547 0.09566 0.07269 0.05484 0.04373  
## Proportion Explained 0.1341 0.1356 0.08384 0.06371 0.04806 0.03832  
## Cumulative Proportion 0.1341 0.2697 0.35349 0.41720 0.46527 0.50359  
## CA6 CA7 CA8 CA9 CA10 CA11  
## Eigenvalue 0.03706 0.03312 0.03183 0.02889 0.02617 0.02573  
## Proportion Explained 0.03248 0.02903 0.02790 0.02532 0.02293 0.02256  
## Cumulative Proportion 0.53607 0.56510 0.59300 0.61832 0.64126 0.66381  
## CA12 CA13 CA14 CA15 CA16 CA17  
## Eigenvalue 0.02362 0.02275 0.02196 0.02068 0.02044 0.01879  
## Proportion Explained 0.02071 0.01994 0.01925 0.01813 0.01792 0.01647  
## Cumulative Proportion 0.68452 0.70446 0.72370 0.74183 0.75975 0.77622  
## CA18 CA19 CA20 CA21 CA22 CA23  
## Eigenvalue 0.01862 0.01791 0.01711 0.01633 0.01488 0.01449  
## Proportion Explained 0.01632 0.01570 0.01500 0.01431 0.01304 0.01270  
## Cumulative Proportion 0.79254 0.80823 0.82323 0.83754 0.85058 0.86329  
## CA24 CA25 CA26 CA27 CA28 CA29  
## Eigenvalue 0.01352 0.01317 0.01281 0.01239 0.011328 0.011098  
## Proportion Explained 0.01185 0.01154 0.01123 0.01086 0.009929 0.009727  
## Cumulative Proportion 0.87514 0.88668 0.89791 0.90877 0.918695 0.928422  
## CA30 CA31 CA32 CA33 CA34  
## Eigenvalue 0.010939 0.010493 0.010011 0.009552 0.009149  
## Proportion Explained 0.009587 0.009197 0.008775 0.008372 0.008018  
## Cumulative Proportion 0.938009 0.947207 0.955981 0.964354 0.972372  
## CA35 CA36 CA37 CA38  
## Eigenvalue 0.008627 0.008251 0.007549 0.007094  
## Proportion Explained 0.007561 0.007232 0.006617 0.006218  
## Cumulative Proportion 0.979933 0.987166 0.993782 1.000000  
##   
## Accumulated constrained eigenvalues  
## Importance of components:  
## CCA1  
## Eigenvalue 0.153  
## Proportion Explained 1.000  
## Cumulative Proportion 1.000  
##   
## Scaling 2 for species and site scores  
## \* Species are scaled proportional to eigenvalues  
## \* Sites are unscaled: weighted dispersion equal on all dimensions  
##   
##   
## Species scores  
##   
## CCA1 CA1 CA2 CA3 CA4 CA5  
## F.PABI 0.75562 1.72859 -0.583825 0.003773 -2.0137759 0.79220  
## F.BALN 0.25402 -0.09550 -0.192351 -0.188404 0.1745661 -0.02071  
## F.CAMB -0.04970 0.75712 -0.197764 0.679156 0.1360347 -0.11695  
## F.APIA 0.32314 -1.24588 0.614602 0.319962 -0.9568597 -0.64248  
## F.CART -0.14261 0.06035 0.055943 0.130987 0.2914564 0.04698  
## F.TULI -0.05597 -0.12004 -0.009927 0.170101 0.1049919 0.08569  
## F.BBET 0.19969 -0.15354 -0.193263 -0.043102 0.0149092 -0.07189  
## F.BRAS -0.98107 0.26993 0.738666 -0.783616 0.0368528 0.13382  
## F.CARY -0.84160 -0.05310 0.539242 -0.047049 -0.1908710 0.10730  
## F.CHEN 0.14787 0.68532 0.369200 0.686000 0.4512230 -0.29979  
## F.BCOR 0.40366 0.75468 0.959717 1.257353 0.1514715 -0.20473  
## F.CUPR 0.12979 -0.07014 -0.407978 0.270834 0.0879333 -1.35914  
## F.CYPE -0.26351 -0.25649 -0.045376 0.118316 0.0008327 0.11798  
## F.RDRY -1.14416 0.31250 1.068321 -0.549190 0.0632402 0.24028  
## F.ELAE 0.44132 -0.47883 -0.276417 -0.567799 0.6194691 -0.62474  
## F.ERIC -0.24925 -0.38278 -0.119788 0.487191 -0.1047648 0.19342  
## F.FABA -0.62001 -0.09770 0.288281 0.242981 0.1650357 0.57922  
## F.FFAG 0.91147 1.51297 -0.409518 0.269234 -2.4290602 -0.04336  
## F.OFRA 0.46870 1.15691 0.275107 1.091715 -0.5257664 -0.07053  
## F.PLAR 0.61894 1.12128 -0.382178 0.256642 -0.1610021 -0.10408  
## F.MMYR 0.72335 0.39514 0.081151 -0.140310 0.3952241 -0.37435  
## F.ONAG -0.11668 -0.11475 0.161242 0.189576 0.0064221 0.55353  
## F.POXR -1.06463 0.16864 0.833836 -0.375757 -0.2058115 -0.19645  
## F.PAPA -1.34158 0.49704 1.736850 -0.785859 -0.1900422 0.03113  
## F.PPIC 0.43233 0.45195 -0.268241 -0.232660 -0.0580807 -0.03061  
## F.PPIN 0.26311 0.79864 0.428723 0.403856 0.3051762 0.04113  
## F.PPLA -0.68281 0.34996 0.698359 -0.806741 0.1236192 -0.59684  
## F.POAC -0.22667 -0.40755 0.154306 0.060290 -0.1643976 0.05091  
## F.POLE 0.62708 -1.37837 0.223129 -0.363048 -0.5032227 1.19687  
## F.POLY -0.65806 -0.34928 0.308051 0.389117 -0.2308841 0.39326  
## F.SPOP 0.61968 -0.26809 -0.040082 -0.459849 0.2233432 -0.06659  
## F.FQUE 0.89828 1.35476 0.396609 0.994059 -0.1860585 -0.38326  
## F.RANU -0.49531 -0.43076 0.568516 -0.087177 -0.4229283 -0.31089  
## F.ROSA -0.25406 -0.28992 0.363278 -0.185492 0.0548036 0.26672  
## F.SSAL -0.35781 -0.25003 0.239861 0.049072 -0.0877479 -0.08869  
## F.SAXI -1.07684 0.22538 0.917101 -0.517983 0.0432015 0.17869  
## F.SCRO -0.87267 -0.27490 0.732060 -0.229350 -0.1923741 0.16091  
## F.RTHA -0.20390 -0.71827 0.554639 0.590235 -1.5411586 -2.32645  
## F.ULMA 0.89493 1.15290 0.527616 1.254926 0.0569167 -0.66505  
##   
##   
## Site scores (weighted averages of species scores)  
##   
## CCA1 CA1 CA2 CA3 CA4 CA5  
## 1 0.045346 1.198878 -0.8401908 0.977332 1.502134 -0.3048485  
## 2 -0.579980 0.990977 -0.4832383 1.420738 -0.223331 1.0521027  
## 3 -0.554348 1.515237 -0.7883055 1.322175 1.054219 0.0242054  
## 4 0.189168 1.486616 -1.2588920 1.610127 -0.320695 0.7784695  
## 5 -0.261627 0.841162 -0.5204524 1.519064 0.817104 0.1865168  
## 6 -0.349562 1.259263 -0.1992640 1.898635 0.970375 0.2494262  
## 7 -0.306060 0.632418 -0.6972196 1.495034 0.199908 1.1921837  
## 8 -0.918860 0.749887 0.1484313 0.719874 0.938288 0.2697960  
## 9 -0.372348 0.768291 -1.2594668 1.521665 1.089670 0.2747950  
## 10 -0.832573 0.181028 -0.1794944 1.016720 0.421278 0.2571859  
## 11 -1.173444 0.835708 -0.3541753 1.160859 0.873429 -0.0452872  
## 12 -0.812611 0.489152 0.4694909 1.542132 0.790612 1.0524471  
## 13 -1.004116 0.953013 1.0140972 1.482652 1.020135 -0.1125067  
## 14 -0.999961 -0.186343 -0.3967796 1.418200 0.272081 0.4570145  
## 15 -0.420560 0.655226 -1.1364269 1.794859 0.849943 0.2464923  
## 16 -1.018632 0.546582 0.2217977 1.502945 0.574668 0.4385957  
## 17 -1.626084 0.465431 1.3665836 0.283192 0.616864 0.9378273  
## 18 -0.666534 1.007992 -0.1229822 0.815269 -0.282626 0.6754601  
## 19 -0.380134 0.669112 -0.8446266 1.268692 0.896114 -0.1050189  
## 20 -1.457983 0.376459 0.5135222 0.885209 0.017947 0.4974774  
## 21 -0.782703 0.175271 -0.2472829 1.211453 0.699063 0.2700937  
## 22 -1.019444 0.549453 0.0452290 0.853247 0.734177 0.2737484  
## 23 -1.544315 -0.251142 0.3867581 0.321296 -0.218157 0.7222023  
## 24 -1.087977 -0.234112 -0.8582775 1.810615 0.202879 0.8693203  
## 25 -1.363236 -0.451734 -0.3778316 1.477490 -0.419262 0.6719992  
## 26 -0.804619 0.220079 -0.3654792 1.842340 0.815131 1.2373154  
## 27 -1.533989 -0.428934 -0.2984235 1.232220 -0.289118 0.4206545  
## 28 -1.113004 0.173001 -0.3821457 1.421776 0.361519 -0.2206046  
## 29 -1.119004 0.358566 0.3655481 1.055430 0.572663 0.3250847  
## 30 -0.981182 0.005083 -0.2745916 1.600357 0.506931 1.2894148  
## 31 -0.781551 -0.455367 -0.6135678 1.204249 -0.165019 0.4315685  
## 32 -1.321609 -0.025899 -0.0054400 1.484843 0.052301 0.4678547  
## 33 -1.436618 -0.070565 -0.4415942 1.408713 0.223743 0.8160744  
## 34 -0.961594 0.382826 0.1270899 1.366353 0.873029 0.9801887  
## 35 -1.120873 0.291819 -0.3236179 1.248107 0.585613 0.7352812  
## 36 -1.621205 -0.111007 -0.2700871 1.029180 -0.017596 0.7427860  
## 37 -1.590175 0.109435 1.6029362 1.367813 -0.128690 0.7690596  
## 38 -0.789223 -0.260023 -1.1902949 0.718349 0.453992 -0.2487071  
## 39 -0.939993 -0.532277 -0.1340383 0.942188 0.106032 0.3517067  
## 40 -1.228819 -0.837470 -0.3610085 0.887414 -0.301230 0.7341640  
## 41 -0.449745 0.269423 -1.2436091 2.368201 1.031227 0.7748496  
## 42 -2.020887 -0.353220 0.3179867 0.846651 -0.260549 0.6715144  
## 43 -1.759443 -0.416705 0.4920957 0.920273 -0.716265 0.5437486  
## 44 -1.614310 0.071888 -0.1620260 1.084078 -0.173120 -0.0514811  
## 45 -1.849447 -0.092608 0.9186075 0.893006 -0.268558 1.1093059  
## 46 -2.485581 -0.473935 0.9294347 -0.191003 -0.746400 1.1084215  
## 47 -2.422937 -0.565775 1.0472562 -0.029173 -0.718415 1.0452724  
## 48 -2.352841 -0.189601 0.8831181 0.480998 -0.422367 0.7169840  
## 49 -0.703596 0.707684 -0.1081548 1.611301 -0.427934 1.2619665  
## 50 -1.720088 0.162923 0.8554769 1.051966 0.185606 0.4706149  
## 51 -2.235807 -0.082167 1.7539377 -0.195549 0.225244 1.7167097  
## 52 -2.556921 -0.080259 1.2350197 -0.117869 -0.444408 0.9255846  
## 53 -2.563587 0.167907 1.6382685 0.374361 -0.428683 1.0218766  
## 54 -1.847658 -0.399333 0.1221000 0.364746 -0.341970 1.2490256  
## 55 -2.310703 0.153555 1.2909201 0.561472 -0.179371 0.5851433  
## 56 -2.165860 -0.070932 1.1140955 0.565817 -0.152467 1.4138897  
## 57 -2.091738 -0.879424 -0.0140425 1.978305 -0.753918 1.6404543  
## 58 -2.450179 -0.128406 1.1534659 1.060616 0.242878 2.2958015  
## 59 -2.230903 0.272364 1.4904487 0.182911 0.199962 0.9513649  
## 60 -1.566867 0.839716 1.1545550 1.271286 1.005181 1.1523843  
## 61 -1.944112 0.122839 0.9950201 0.143599 0.275045 0.3972953  
## 62 -1.883760 0.327197 1.0292830 0.142519 0.548538 1.4117824  
## 63 -1.800005 0.301354 1.3379549 0.396617 0.529354 1.3455065  
## 64 -2.843755 -0.221126 2.2960272 -0.598357 -0.861303 0.4555159  
## 65 -2.630582 0.003353 1.4876000 -0.573895 -0.405427 1.0443999  
## 66 -1.520030 0.439309 0.7844449 0.472881 0.746857 0.5480029  
## 67 -2.402729 -0.060705 1.3960530 -0.400454 -0.132768 0.8913850  
## 68 -1.920009 -0.054125 0.6915591 0.995668 -0.223630 1.2275249  
## 69 -2.518581 0.862500 1.4849293 -0.110874 0.630371 0.4537666  
## 70 -1.102365 0.543733 0.8793340 -0.055403 0.448145 0.7204526  
## 71 -1.479373 0.704631 1.7239870 -0.426563 0.646853 0.2859513  
## 72 -1.620561 0.497986 1.5014944 0.134511 0.523816 1.4230292  
## 73 -1.268323 1.191186 1.7037566 -0.131916 0.987152 0.5500252  
## 74 -1.630983 0.487837 1.5022352 0.182387 -0.142740 -0.2594590  
## 75 -1.230470 0.996928 0.5786490 -0.801960 0.678355 0.4803566  
## 76 -1.768814 0.820273 1.2725611 -0.787297 -0.196119 -1.3303250  
## 77 -0.729084 1.256593 0.1611428 0.142430 0.830572 -0.2541586  
## 78 -1.259517 0.706998 0.5443150 -0.851868 0.464646 0.2091446  
## 79 -0.933379 1.049439 1.0122491 -0.492601 1.018192 -0.1298656  
## 80 -1.306292 1.273585 1.6887062 -0.906012 1.207022 0.6364313  
## 81 -1.623186 0.383069 0.9863534 -0.743670 -0.564646 -1.1518173  
## 82 -1.794444 0.839692 1.1165568 -0.845102 0.433824 -0.1009641  
## 83 -1.613444 0.722337 0.8666771 -0.685421 0.267833 0.3612489  
## 84 -1.214786 1.008743 0.8034430 -0.386626 0.510987 -0.4839850  
## 85 -2.618810 0.786686 2.3142570 -1.388295 -0.103657 -0.0005464  
## 86 -1.343115 1.191876 0.9575921 -1.081725 0.166817 -0.7862389  
## 87 -1.236060 0.969429 0.5424966 -0.343283 0.321984 -0.1330297  
## 88 -0.968123 0.379808 -0.2505233 -0.656455 0.243738 -0.2336643  
## 89 -0.563731 0.941211 -0.0669681 0.044954 0.357234 -1.0311137  
## 90 -0.771976 1.055860 -0.1071337 -0.257889 1.271746 0.2616308  
## 91 -2.487466 0.795067 2.3227552 -0.990196 -0.174231 0.0785002  
## 92 -2.785894 0.818308 2.5408162 -2.024026 -0.166852 0.5906558  
## 93 -0.825508 1.075796 0.1431505 -0.680672 0.219935 -0.3230484  
## 94 -1.205483 0.893425 0.1285969 -0.477851 0.491209 -0.1105972  
## 95 -1.195074 1.071593 0.9915786 -0.482893 0.817361 -0.4203321  
## 96 -1.364185 0.578529 0.3359375 -0.991147 0.135191 -0.0935890  
## 97 -2.540221 0.428738 2.0809526 -1.543979 -0.850772 -0.4000684  
## 98 -1.631458 1.239155 1.6194981 -0.407051 0.359991 -0.2452322  
## 99 -1.653471 1.016946 1.4707972 -0.524190 0.160205 -0.4911377  
## 100 -1.749883 0.462811 0.8879224 -0.828334 -1.021311 -0.9959648  
## 101 -2.376143 1.451841 2.7744521 -1.996183 0.069004 -0.5328698  
## 102 -1.803744 1.611519 2.0688520 -1.920639 0.439198 -0.5364427  
## 103 -1.655363 1.077316 0.9657683 -1.162908 0.121323 -0.9483161  
## 104 -2.395533 0.044432 1.0555703 -0.195608 -0.924922 -0.2652478  
## 105 -2.484586 0.160647 1.8299612 -0.534888 -0.813699 -0.3222880  
## 106 -4.141468 0.468809 4.2807650 -2.940380 -1.328495 -0.4502581  
## 107 -3.313961 0.174004 2.9561614 -1.600785 -1.156582 -0.1315456  
## 108 -3.368678 0.001266 2.6215044 -1.732441 -0.901416 0.3817342  
## 109 -2.644427 -0.185205 1.9790481 -1.062027 -0.860639 0.1404106  
## 110 -3.305770 0.044004 2.8127297 -1.767215 -1.087730 0.2109285  
## 111 -2.329940 0.859200 2.0528466 -0.981532 -0.376958 -1.6132528  
## 112 -2.782616 -0.592306 2.1121116 -0.843891 -2.106089 -0.8389502  
## 113 -3.322507 -0.034258 2.5971875 -0.979870 -2.453767 -2.9930563  
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## 777 0.800802 -0.471669 0.0192213 -0.991614 0.922706 0.2524010  
## 778 0.872430 -0.291312 -0.6528674 -0.725683 0.538011 -0.0305593  
## 779 1.078981 -0.152112 -0.6819145 -1.023839 0.670055 -0.3210532  
## 780 0.855055 -0.066215 -0.9140240 -0.303226 -0.032309 -1.6278727  
## 781 0.585976 -0.576443 0.1943825 -0.715485 0.569804 -0.6329125  
## 782 0.598531 -0.577468 -0.2257657 -0.687889 1.066160 0.1367611  
## 783 0.633813 -0.592613 0.1519883 -0.440430 0.866768 -0.3194441  
## 784 0.573923 -0.732268 -0.3009633 -0.429232 0.843714 0.1138096  
## 785 0.798024 -0.674786 -0.5082254 -0.613975 0.487661 0.2857936  
## 786 0.738579 -0.228301 -0.1502542 -0.762860 1.496759 -0.1605283  
## 787 1.053423 -0.489852 -0.6304614 -0.898355 1.277801 -1.7726422  
## 788 0.564172 -0.901588 -0.5289662 -0.368869 0.656430 0.1369493  
## 789 -0.412179 -0.064897 0.2424158 -0.621708 0.430027 0.4478342  
## 790 -0.368938 0.051610 0.0240111 -0.654053 0.478951 -0.8974515  
## 791 -0.016415 0.067566 -0.7239090 -0.535370 0.754672 -0.6753102  
## 792 0.736702 -0.938659 -0.9799290 -0.662895 1.109679 -0.5328124  
## 793 0.142176 -0.991183 0.2045427 -0.483793 0.241591 0.1917243  
## 794 -0.236467 -0.053786 -0.1061749 -0.499507 0.694285 -0.6693814  
## 795 -0.123598 -0.042666 -0.7048688 -0.353356 0.126981 -0.4927625  
## 796 -0.438468 0.314399 -0.0681259 -0.589333 0.896201 -0.1049076  
## 797 0.111981 0.193957 -0.9640668 -0.325568 0.867386 -0.3281965  
## 798 -0.290493 0.152098 -0.4743533 -0.695327 0.855250 -0.5691951  
## 799 -0.591315 0.155659 -0.1058641 -0.810130 0.733587 0.0704063  
## 800 -0.592241 0.188827 0.0463576 -1.170444 0.497561 -0.5716878  
## 801 -0.172597 0.229496 -0.8352145 -0.375075 0.679464 0.0240584  
## 802 -0.078169 0.376125 -0.7354682 -0.779096 0.792970 -0.0740503  
## 803 0.049757 -0.846427 0.3268633 -0.131535 0.446929 0.2423598  
## 804 -0.293247 0.022023 -0.5974377 -0.119335 0.635078 -0.4590907  
## 805 -0.536683 -0.172178 0.1921671 -0.639890 0.477617 0.0397045  
## 806 -0.895643 -0.315902 0.4844676 -0.692726 0.102318 0.1364042  
## 807 0.288917 -0.800948 0.0313806 -0.159149 0.501953 0.4012388  
## 808 0.788434 -0.441288 -0.5936702 -0.699760 0.832704 0.0599326  
## 809 0.050964 -0.841999 -0.1573527 -0.651444 -0.241260 0.2061550  
## 810 0.197889 -0.934178 0.0336671 -0.216641 0.465942 0.1704466  
## 811 0.153444 -0.856672 -0.1162145 0.052495 0.440679 0.7349500  
## 812 0.362266 -0.561003 -0.3656832 -0.160136 0.025081 0.5287669  
## 813 -0.051460 -0.822384 0.3473891 -0.104681 0.167885 0.2593582  
## 814 0.333069 -0.676311 -0.1070078 0.062761 0.662916 0.3212254  
## 815 0.558366 -0.750385 -0.6021936 0.068583 0.708120 0.1675111  
## 816 -0.129976 -1.068212 0.0728836 0.143034 0.179854 0.9069236  
## 817 0.078239 -0.607053 0.0190477 -0.033001 0.290163 0.1755941  
## 818 0.112038 -0.906281 -0.0460575 -0.368263 0.663661 -0.1612367  
## 819 0.134397 -0.704503 0.1295461 -0.055933 0.318817 0.1626132  
## 820 -0.046349 -0.503778 -0.0978280 0.138763 0.153061 0.1094062  
## 821 0.531143 -0.345688 -0.2970201 0.355912 0.789583 0.3467229  
## 822 0.102606 -0.864271 0.0424575 0.797081 0.115567 0.5805458  
## 823 -0.032526 -1.025800 -0.1367105 0.794403 0.237770 0.6354042  
## 824 -0.179128 -0.768889 0.2210966 0.045939 -0.037687 0.5851653  
## 825 -0.291190 -0.906117 0.4767367 0.084785 0.125909 0.2774253  
## 826 -0.566866 -0.251845 -0.5199736 -0.697516 0.593589 -0.3401290  
## 827 0.167969 -0.560650 -0.5053430 0.288578 0.548363 0.4889217  
## 828 0.111927 -0.457003 -0.2211865 0.055516 0.616922 -0.0859748  
## 829 -0.308022 -0.501256 0.5075899 0.787651 0.378849 0.4957372  
## 830 0.423052 -0.530185 -0.3687140 -0.258750 0.822246 0.2521912  
## 831 -0.038238 -0.606968 -0.3903633 0.471013 0.272105 0.7900050  
##   
##   
## Site constraints (linear combinations of constraining variables)  
##   
## CCA1 CA1 CA2 CA3 CA4 CA5  
## 1 -1.316409 1.198878 -0.8401908 0.977332 1.502134 -0.3048485  
## 2 -1.178415 0.990977 -0.4832383 1.420738 -0.223331 1.0521027  
## 3 -1.619996 1.515237 -0.7883055 1.322175 1.054219 0.0242054  
## 4 -1.150816 1.486616 -1.2588920 1.610127 -0.320695 0.7784695  
## 5 -0.874828 0.841162 -0.5204524 1.519064 0.817104 0.1865168  
## 6 -1.206014 1.259263 -0.1992640 1.898635 0.970375 0.2494262  
## 7 -1.123217 0.632418 -0.6972196 1.495034 0.199908 1.1921837  
## 8 -0.957624 0.749887 0.1484313 0.719874 0.938288 0.2697960  
## 9 -1.619996 0.768291 -1.2594668 1.521665 1.089670 0.2747950  
## 10 -0.847229 0.181028 -0.1794944 1.016720 0.421278 0.2571859  
## 11 -1.702793 0.835708 -0.3541753 1.160859 0.873429 -0.0452872  
## 12 -0.598840 0.489152 0.4694909 1.542132 0.790612 1.0524471  
## 13 -0.902427 0.953013 1.0140972 1.482652 1.020135 -0.1125067  
## 14 -0.985223 -0.186343 -0.3967796 1.418200 0.272081 0.4570145  
## 15 -1.564799 0.655226 -1.1364269 1.794859 0.849943 0.2464923  
## 16 -0.764433 0.546582 0.2217977 1.502945 0.574668 0.4385957  
## 17 -0.985223 0.465431 1.3665836 0.283192 0.616864 0.9378273  
## 18 -0.930026 1.007992 -0.1229822 0.815269 -0.282626 0.6754601  
## 19 -1.399206 0.669112 -0.8446266 1.268692 0.896114 -0.1050189  
## 20 -1.178415 0.376459 0.5135222 0.885209 0.017947 0.4974774  
## 21 -0.792031 0.175271 -0.2472829 1.211453 0.699063 0.2700937  
## 22 -1.150816 0.549453 0.0452290 0.853247 0.734177 0.2737484  
## 23 -1.123217 -0.251142 0.3867581 0.321296 -0.218157 0.7222023  
## 24 -1.371607 -0.234112 -0.8582775 1.810615 0.202879 0.8693203  
## 25 -1.316409 -0.451734 -0.3778316 1.477490 -0.419262 0.6719992  
## 26 -1.040421 0.220079 -0.3654792 1.842340 0.815131 1.2373154  
## 27 -1.371607 -0.428934 -0.2984235 1.232220 -0.289118 0.4206545  
## 28 -1.592397 0.173001 -0.3821457 1.421776 0.361519 -0.2206046  
## 29 -0.874828 0.358566 0.3655481 1.055430 0.572663 0.3250847  
## 30 -0.957624 0.005083 -0.2745916 1.600357 0.506931 1.2894148  
## 31 -1.206014 -0.455367 -0.6135678 1.204249 -0.165019 0.4315685  
## 32 -1.178415 -0.025899 -0.0054400 1.484843 0.052301 0.4678547  
## 33 -1.399206 -0.070565 -0.4415942 1.408713 0.223743 0.8160744  
## 34 -0.847229 0.382826 0.1270899 1.366353 0.873029 0.9801887  
## 35 -1.564799 0.291819 -0.3236179 1.248107 0.585613 0.7352812  
## 36 -1.702793 -0.111007 -0.2700871 1.029180 -0.017596 0.7427860  
## 37 -0.571241 0.109435 1.6029362 1.367813 -0.128690 0.7690596  
## 38 -1.647595 -0.260023 -1.1902949 0.718349 0.453992 -0.2487071  
## 39 -0.930026 -0.532277 -0.1340383 0.942188 0.106032 0.3517067  
## 40 -0.930026 -0.837470 -0.3610085 0.887414 -0.301230 0.7341640  
## 41 -1.371607 0.269423 -1.2436091 2.368201 1.031227 0.7748496  
## 42 -1.316409 -0.353220 0.3179867 0.846651 -0.260549 0.6715144  
## 43 -1.040421 -0.416705 0.4920957 0.920273 -0.716265 0.5437486  
## 44 -1.454403 0.071888 -0.1620260 1.084078 -0.173120 -0.0514811  
## 45 -1.206014 -0.092608 0.9186075 0.893006 -0.268558 1.1093059  
## 46 -1.371607 -0.473935 0.9294347 -0.191003 -0.746400 1.1084215  
## 47 -1.206014 -0.565775 1.0472562 -0.029173 -0.718415 1.0452724  
## 48 -1.454403 -0.189601 0.8831181 0.480998 -0.422367 0.7169840  
## 49 -1.095619 0.707684 -0.1081548 1.611301 -0.427934 1.2619665  
## 50 -1.040421 0.162923 0.8554769 1.051966 0.185606 0.4706149  
## 51 -0.957624 -0.082167 1.7539377 -0.195549 0.225244 1.7167097  
## 52 -1.564799 -0.080259 1.2350197 -0.117869 -0.444408 0.9255846  
## 53 -1.399206 0.167907 1.6382685 0.374361 -0.428683 1.0218766  
## 54 -1.482002 -0.399333 0.1221000 0.364746 -0.341970 1.2490256  
## 55 -1.316409 0.153555 1.2909201 0.561472 -0.179371 0.5851433  
## 56 -1.261211 -0.070932 1.1140955 0.565817 -0.152467 1.4138897  
## 57 -1.233613 -0.879424 -0.0140425 1.978305 -0.753918 1.6404543  
## 58 -1.150816 -0.128406 1.1534659 1.060616 0.242878 2.2958015  
## 59 -1.178415 0.272364 1.4904487 0.182911 0.199962 0.9513649  
## 60 -1.123217 0.839716 1.1545550 1.271286 1.005181 1.1523843  
## 61 -0.902427 0.122839 0.9950201 0.143599 0.275045 0.3972953  
## 62 -1.123217 0.327197 1.0292830 0.142519 0.548538 1.4117824  
## 63 -1.012822 0.301354 1.3379549 0.396617 0.529354 1.3455065  
## 64 -1.206014 -0.221126 2.2960272 -0.598357 -0.861303 0.4555159  
## 65 -1.592397 0.003353 1.4876000 -0.573895 -0.405427 1.0443999  
## 66 -1.178415 0.439309 0.7844449 0.472881 0.746857 0.5480029  
## 67 -1.454403 -0.060705 1.3960530 -0.400454 -0.132768 0.8913850  
## 68 -1.509601 -0.054125 0.6915591 0.995668 -0.223630 1.2275249  
## 69 -1.895985 0.862500 1.4849293 -0.110874 0.630371 0.4537666  
## 70 -0.902427 0.543733 0.8793340 -0.055403 0.448145 0.7204526  
## 71 -0.874828 0.704631 1.7239870 -0.426563 0.646853 0.2859513  
## 72 -0.902427 0.497986 1.5014944 0.134511 0.523816 1.4230292  
## 73 -0.930026 1.191186 1.7037566 -0.131916 0.987152 0.5500252  
## 74 -0.930026 0.487837 1.5022352 0.182387 -0.142740 -0.2594590  
## 75 -1.206014 0.996928 0.5786490 -0.801960 0.678355 0.4803566  
## 76 -1.206014 0.820273 1.2725611 -0.787297 -0.196119 -1.3303250  
## 77 -1.288810 1.256593 0.1611428 0.142430 0.830572 -0.2541586  
## 78 -1.344008 0.706998 0.5443150 -0.851868 0.464646 0.2091446  
## 79 -1.123217 1.049439 1.0122491 -0.492601 1.018192 -0.1298656  
## 80 -1.123217 1.273585 1.6887062 -0.906012 1.207022 0.6364313  
## 81 -1.344008 0.383069 0.9863534 -0.743670 -0.564646 -1.1518173  
## 82 -1.316409 0.839692 1.1165568 -0.845102 0.433824 -0.1009641  
## 83 -1.261211 0.722337 0.8666771 -0.685421 0.267833 0.3612489  
## 84 -1.371607 1.008743 0.8034430 -0.386626 0.510987 -0.4839850  
## 85 -1.316409 0.786686 2.3142570 -1.388295 -0.103657 -0.0005464  
## 86 -1.344008 1.191876 0.9575921 -1.081725 0.166817 -0.7862389  
## 87 -1.344008 0.969429 0.5424966 -0.343283 0.321984 -0.1330297  
## 88 -1.482002 0.379808 -0.2505233 -0.656455 0.243738 -0.2336643  
## 89 -1.482002 0.941211 -0.0669681 0.044954 0.357234 -1.0311137  
## 90 -1.454403 1.055860 -0.1071337 -0.257889 1.271746 0.2616308  
## 91 -1.509601 0.795067 2.3227552 -0.990196 -0.174231 0.0785002  
## 92 -1.482002 0.818308 2.5408162 -2.024026 -0.166852 0.5906558  
## 93 -1.454403 1.075796 0.1431505 -0.680672 0.219935 -0.3230484  
## 94 -1.537200 0.893425 0.1285969 -0.477851 0.491209 -0.1105972  
## 95 -1.344008 1.071593 0.9915786 -0.482893 0.817361 -0.4203321  
## 96 -1.647595 0.578529 0.3359375 -0.991147 0.135191 -0.0935890  
## 97 -1.592397 0.428738 2.0809526 -1.543979 -0.850772 -0.4000684  
## 98 -1.509601 1.239155 1.6194981 -0.407051 0.359991 -0.2452322  
## 99 -1.564799 1.016946 1.4707972 -0.524190 0.160205 -0.4911377  
## 100 -1.675194 0.462811 0.8879224 -0.828334 -1.021311 -0.9959648  
## 101 -1.757990 1.451841 2.7744521 -1.996183 0.069004 -0.5328698  
## 102 -1.647595 1.611519 2.0688520 -1.920639 0.439198 -0.5364427  
## 103 -1.757990 1.077316 0.9657683 -1.162908 0.121323 -0.9483161  
## 104 -1.675194 0.044432 1.0555703 -0.195608 -0.924922 -0.2652478  
## 105 -1.564799 0.160647 1.8299612 -0.534888 -0.813699 -0.3222880  
## 106 -1.647595 0.468809 4.2807650 -2.940380 -1.328495 -0.4502581  
## 107 -1.702793 0.174004 2.9561614 -1.600785 -1.156582 -0.1315456  
## 108 -1.647595 0.001266 2.6215044 -1.732441 -0.901416 0.3817342  
## 109 -1.344008 -0.185205 1.9790481 -1.062027 -0.860639 0.1404106  
## 110 -1.344008 0.044004 2.8127297 -1.767215 -1.087730 0.2109285  
## 111 -1.702793 0.859200 2.0528466 -0.981532 -0.376958 -1.6132528  
## 112 -1.509601 -0.592306 2.1121116 -0.843891 -2.106089 -0.8389502  
## 113 -1.730392 -0.034258 2.5971875 -0.979870 -2.453767 -2.9930563  
## 114 -1.537200 -0.084444 1.4662379 -0.449184 -0.995698 -0.3145575  
## 115 -0.985223 -0.242449 -1.4132389 1.112887 0.145957 0.8141646  
## 116 -0.985223 0.608806 -1.4154265 1.011990 0.874943 -0.4684714  
## 117 -1.040421 0.754278 -1.8161372 0.190453 1.227323 -0.2679313  
## 118 -1.012822 -0.051578 0.1989492 0.767445 0.031071 0.3518504  
## 119 -0.322851 -0.658240 -0.7769999 2.653557 -0.111602 1.0267423  
## 120 -0.322851 -0.860095 -0.5815281 2.679904 -0.343270 1.0924916  
## 121 -0.571241 -0.786918 -0.4090395 1.976075 -0.925457 -1.5477203  
## 122 -0.654037 -1.204290 -0.9580989 1.791884 -0.757096 0.5343832  
## 123 -0.598840 -0.923293 -0.9461327 1.476685 -0.427557 0.3419306  
## 124 -0.350450 -0.875269 -0.4798975 1.488098 -0.132534 0.6444321  
## 125 -0.295252 -0.938292 -0.4518225 2.135529 -1.097000 -0.6152721  
## 126 -0.350450 -1.152449 -0.6810987 1.298499 -0.394920 0.6394192  
## 127 -0.295252 -0.871551 -0.3961442 2.178389 -1.029566 -0.5962542  
## 128 -0.543642 -1.032540 -0.0771916 1.702265 -0.622522 -0.1375690  
## 129 -0.488444 -1.146373 -0.7798629 1.641311 -0.737547 -0.6995115  
## 131 -0.764433 -1.114422 -1.1128817 1.760324 -0.416304 -0.0277826  
## 132 -0.460845 -1.020277 -0.4229324 1.658344 -1.130152 -1.3239952  
## 133 -0.516043 -1.055456 -0.8119202 1.400242 -0.362666 0.7085607  
## 134 -0.460845 -1.266950 -0.5191332 2.622377 -0.637819 0.8280612  
## 135 -0.460845 -1.154518 -0.0380863 1.530534 -0.871540 0.2307477  
## 136 -0.433247 -1.007937 -0.9818016 1.686701 -0.280639 -0.1338083  
## 137 -0.433247 -1.037252 -0.6490753 1.239976 -0.461977 -0.0140721  
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## 142 -0.433247 -1.670738 0.2681230 1.642254 -2.739267 -2.1885575  
## 143 -0.543642 -1.084317 -0.1687557 1.465349 -1.267537 -1.2482046  
## 144 -0.433247 -1.050164 -0.6120760 1.670799 -1.094340 -1.9033310  
## 145 -0.405648 -1.340140 -0.0830130 0.801746 -1.929351 -3.5784353  
## 146 -0.240055 -1.520038 0.4554075 1.498545 -2.538089 -3.0020944  
## 147 -0.378049 -0.716918 0.4673450 0.656990 -0.445811 0.3019268  
## 148 -0.488444 -0.451042 0.0584094 0.994831 0.013711 0.0507628  
## 149 -0.157258 -0.378349 1.1979189 0.468842 -0.570994 -0.7966330  
## 150 -0.157258 -0.643275 0.7358522 0.957639 -0.569333 -0.1578660  
## 151 -0.129659 -1.464674 1.6499936 0.557375 -2.961866 -5.4103695  
## 152 -0.129659 -1.635340 1.5585316 0.489366 -3.180660 -5.5496573  
## 153 -0.157258 -1.742875 1.9765661 1.014564 -4.792037 -8.1027769  
## 154 0.035934 -1.820222 1.7410616 1.321877 -4.138477 -5.4504682  
## 155 -0.654037 -0.654188 -0.0938970 1.624507 -0.060161 1.1629599  
## 156 -0.736834 -0.633000 0.2951782 0.883168 -0.278198 0.1993733  
## 157 -0.764433 -0.167384 0.4036841 1.574983 -0.427880 0.1558338  
## 158 -0.736834 -0.735071 0.4633237 0.969312 -0.485175 0.9991778  
## 159 -0.819630 -0.806520 -1.1009271 0.364294 0.256464 -2.1485929  
## 160 -0.819630 -0.744859 -1.0895291 0.677894 0.117262 -1.7413700  
## 161 -0.764433 -0.821157 -0.9211433 0.615297 -0.086846 -2.4317323  
## 162 -0.957624 -0.110526 0.0308724 1.613450 0.198944 -0.5054396  
## 163 -0.709235 -0.771387 -0.3740449 1.902474 -0.837415 -1.2843816  
## 164 -0.654037 -0.991477 -0.9305612 0.802505 -0.992241 -4.2372714  
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## 613 -0.322851 -0.202190 -0.7596850 -0.154718 0.741054 0.7669389  
## 614 -0.322851 0.189291 -0.6700012 -0.414527 -0.434576 0.3205055  
## 615 -0.433247 0.209456 -1.4593002 0.323721 1.041505 0.0497955  
## 616 -0.212456 0.254047 -1.2478903 0.070309 0.820710 -0.1170657  
## 617 -0.571241 0.165450 -0.6782218 0.447061 -0.002326 0.8313618  
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## 620 -0.019264 0.579489 -1.1971129 -0.169243 0.920941 -1.2832655  
## 621 -0.102061 0.504470 -0.6856699 1.163028 0.365749 -2.1814253  
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## 643 -0.074462 0.346275 -1.2920931 0.273164 0.643186 -0.3788765  
## 644 -0.157258 0.117592 -1.2661400 0.515584 0.770887 -0.8448739  
## 645 -0.184857 0.256483 -0.9490664 1.021065 0.649023 -0.6838455  
## 646 -0.184857 0.029488 -0.8863911 0.938493 0.462994 -0.8777560  
## 647 -0.184857 0.037649 -0.9490073 0.346743 0.638127 -0.6549448  
## 648 -0.184857 0.335934 -1.4162386 0.176497 0.746393 -0.9855101  
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## 829 0.173928 -0.501256 0.5075899 0.787651 0.378849 0.4957372  
## 830 0.229125 -0.530185 -0.3687140 -0.258750 0.822246 0.2521912  
## 831 -0.019264 -0.606968 -0.3903633 0.471013 0.272105 0.7900050  
##   
##   
## Biplot scores for constraining variables  
##   
## CCA1 CA1 CA2 CA3 CA4 CA5  
## arctic.env$tjul 1 0 0 0 0 0

#January variance  
arctic\_pollen\_cca\_tjan <- cca(arctic\_pollen\_sqrt ~ arctic.env$tjan)  
summary(arctic\_pollen\_cca\_tjan)

##   
## Call:  
## cca(formula = arctic\_pollen\_sqrt ~ arctic.env$tjan)   
##   
## Partitioning of scaled Chi-square:  
## Inertia Proportion  
## Total 1.14094 1.00000  
## Constrained 0.05208 0.04565  
## Unconstrained 1.08886 0.95435  
##   
## Eigenvalues, and their contribution to the scaled Chi-square   
##   
## Importance of components:  
## CCA1 CA1 CA2 CA3 CA4 CA5  
## Eigenvalue 0.05208 0.2441 0.1231 0.06483 0.04766 0.03817  
## Proportion Explained 0.04565 0.2140 0.1079 0.05682 0.04177 0.03345  
## Cumulative Proportion 0.04565 0.2596 0.3675 0.42430 0.46607 0.49953  
## CA6 CA7 CA8 CA9 CA10 CA11  
## Eigenvalue 0.03557 0.03371 0.03229 0.02915 0.02799 0.02583  
## Proportion Explained 0.03117 0.02955 0.02830 0.02555 0.02453 0.02264  
## Cumulative Proportion 0.53070 0.56025 0.58855 0.61410 0.63863 0.66127  
## CA12 CA13 CA14 CA15 CA16 CA17  
## Eigenvalue 0.02536 0.02327 0.02264 0.02082 0.01947 0.01886  
## Proportion Explained 0.02222 0.02040 0.01985 0.01825 0.01707 0.01653  
## Cumulative Proportion 0.68349 0.70389 0.72374 0.74199 0.75905 0.77558  
## CA18 CA19 CA20 CA21 CA22 CA23  
## Eigenvalue 0.01830 0.01767 0.01720 0.01596 0.01571 0.01447  
## Proportion Explained 0.01604 0.01549 0.01508 0.01399 0.01377 0.01268  
## Cumulative Proportion 0.79162 0.80711 0.82219 0.83618 0.84995 0.86263  
## CA24 CA25 CA26 CA27 CA28 CA29  
## Eigenvalue 0.01368 0.01288 0.01281 0.01246 0.01187 0.01132  
## Proportion Explained 0.01199 0.01129 0.01123 0.01092 0.01040 0.00992  
## Cumulative Proportion 0.87462 0.88591 0.89714 0.90806 0.91846 0.92838  
## CA30 CA31 CA32 CA33 CA34  
## Eigenvalue 0.010834 0.010535 0.009985 0.009799 0.009292  
## Proportion Explained 0.009496 0.009234 0.008751 0.008589 0.008144  
## Cumulative Proportion 0.937878 0.947112 0.955863 0.964452 0.972596  
## CA35 CA36 CA37 CA38  
## Eigenvalue 0.008381 0.008264 0.007498 0.007124  
## Proportion Explained 0.007346 0.007243 0.006572 0.006244  
## Cumulative Proportion 0.979941 0.987184 0.993756 1.000000  
##   
## Accumulated constrained eigenvalues  
## Importance of components:  
## CCA1  
## Eigenvalue 0.05208  
## Proportion Explained 1.00000  
## Cumulative Proportion 1.00000  
##   
## Scaling 2 for species and site scores  
## \* Species are scaled proportional to eigenvalues  
## \* Sites are unscaled: weighted dispersion equal on all dimensions  
##   
##   
## Species scores  
##   
## CCA1 CA1 CA2 CA3 CA4 CA5  
## F.PABI -0.748307 1.50388 1.22400 1.311503 -1.281544 0.156585  
## F.BALN 0.012742 0.23213 -0.32516 0.024131 0.079395 -0.079075  
## F.CAMB -0.193349 0.40628 0.65048 -0.516476 -0.156256 0.066571  
## F.APIA -1.088288 -0.81848 -0.32633 0.308865 1.088276 -0.891505  
## F.CART 0.162851 -0.05856 0.06826 -0.278398 -0.003256 -0.222446  
## F.TULI -0.017109 -0.11112 -0.05793 -0.205732 -0.061377 -0.346384  
## F.BBET -0.128512 0.12384 -0.27070 0.014671 0.051086 0.061768  
## F.BRAS 0.754666 -0.73780 0.62540 0.656529 0.128209 -0.604855  
## F.CARY 0.297303 -0.84449 0.48735 0.179167 -0.101482 0.082015  
## F.CHEN 0.098491 0.37701 0.72090 -0.777829 0.322790 -0.157631  
## F.BCOR -0.490295 0.32749 1.26823 -0.995550 0.689732 -0.633585  
## F.CUPR -0.349853 0.18773 -0.21778 -0.214290 0.909247 0.640225  
## F.CYPE 0.007011 -0.33491 -0.11522 -0.106384 -0.181983 -0.007558  
## F.RDRY 0.932799 -0.95507 0.89397 0.425093 -0.004080 -0.041386  
## F.ELAE 0.557317 0.34564 -1.03518 -0.105607 0.643761 0.489925  
## F.ERIC -0.306602 -0.43655 -0.09643 -0.313092 -0.338071 0.275799  
## F.FABA 0.240575 -0.62142 0.26881 -0.283576 -0.513821 0.032981  
## F.FFAG -0.775350 1.43886 1.15932 1.225292 -0.763059 0.722552  
## F.OFRA -0.439488 0.77438 1.25339 -0.483315 -0.099970 -0.044177  
## F.PLAR -0.225333 1.18326 0.57361 -0.036016 -0.128661 0.130836  
## F.MMYR 0.155339 0.83248 -0.03862 -0.173087 0.616186 0.185372  
## F.ONAG -0.128296 -0.25060 0.11709 -0.132691 -0.362608 -0.114178  
## F.POXR 0.608121 -0.93249 0.75574 0.460590 0.241887 0.099692  
## F.PAPA 1.306297 -1.15338 1.32397 0.700106 0.395614 0.409123  
## F.PPIC -0.010254 0.67806 0.03055 0.231894 -0.027568 0.040631  
## F.PPIN 0.138471 0.51524 0.75983 -0.476107 0.127308 -0.043022  
## F.PPLA 0.495835 -0.46462 0.61089 0.679401 0.826457 -0.473985  
## F.POAC -0.106493 -0.47916 -0.09870 0.039873 0.006671 -0.160098  
## F.POLE -0.517132 -0.34553 -1.11693 0.412712 0.269270 -3.556732  
## F.POLY 0.217430 -0.81520 0.15400 -0.252767 -0.535269 0.332009  
## F.SPOP -0.082915 0.36819 -0.52717 0.204684 0.386043 -0.137012  
## F.FQUE -0.438992 1.20104 1.26477 -0.599403 0.405099 -0.341412  
## F.RANU 0.125062 -0.79910 0.12632 0.273336 0.363713 0.098430  
## F.ROSA 0.223281 -0.45249 -0.03008 0.083222 -0.032149 -0.344747  
## F.SSAL 0.060585 -0.49602 0.06146 0.007631 0.067048 0.220187  
## F.SAXI 0.805385 -0.91238 0.75896 0.420968 0.032053 -0.200340  
## F.SCRO 0.386311 -1.03839 0.37129 0.286923 -0.027961 0.280382  
## F.RTHA -1.011474 -0.92408 0.30729 0.476356 1.724696 1.364939  
## F.ULMA -0.460352 1.07229 1.17752 -0.970638 0.803064 -0.691226  
##   
##   
## Site scores (weighted averages of species scores)  
##   
## CCA1 CA1 CA2 CA3 CA4 CA5  
## 1 0.493183 0.1440687 0.866089 -1.314607 0.1472995 -4.140e-01  
## 2 0.148493 -0.1870920 1.098654 -0.932128 -1.7091009 -5.652e-02  
## 3 0.724260 -0.0148379 1.290541 -1.382764 -0.6786310 -1.107e+00  
## 4 -0.802142 0.4294046 1.078341 -0.973632 -1.7687943 3.699e-01  
## 5 0.032954 0.0268321 0.747740 -1.603702 -0.7801355 5.233e-01  
## 6 0.184132 -0.0048560 1.344968 -1.911929 -0.4132985 -4.599e-01  
## 7 -0.418107 -0.2511527 0.765467 -1.125998 -1.3993256 2.804e-01  
## 8 1.372479 -0.3939139 0.998241 -0.939556 -0.5067101 3.749e-02  
## 9 -0.106339 -0.1899741 0.456569 -1.671911 -0.8962494 3.379e-02  
## 10 0.369961 -0.4732518 0.362202 -1.068140 -0.8032787 1.011e+00  
## 11 1.087165 -0.5916775 0.968397 -1.268853 -0.5264319 -1.662e-01  
## 12 0.963131 -0.4161824 0.992305 -1.701732 -1.1482768 2.771e-01  
## 13 1.391366 -0.4578208 1.643043 -1.639196 0.3376550 -6.584e-01  
## 14 -0.148919 -0.7953698 0.227146 -1.240667 -1.1135086 1.326e+00  
## 15 -0.468981 -0.1907744 0.362880 -1.885530 -0.9598723 5.003e-01  
## 16 0.841120 -0.4995241 1.029781 -1.483884 -0.9685692 -5.327e-03  
## 17 2.596868 -0.9556221 1.341365 -0.497939 -0.3773456 3.053e-01  
## 18 0.597516 -0.2842294 1.374356 -0.213935 -1.0645958 -3.591e-01  
## 19 -0.044281 -0.1260996 0.357144 -1.486751 -0.4211206 -1.392e-01  
## 20 1.317871 -0.9736513 1.191372 -0.552366 -0.6508043 4.306e-01  
## 21 0.206064 -0.4778016 0.413332 -1.291698 -0.7443950 2.494e-01  
## 22 1.196374 -0.6330364 0.963736 -0.888315 -0.4737751 3.647e-01  
## 23 1.080856 -1.1977490 0.529151 -0.017368 -0.7096422 1.768e-01  
## 24 -0.497385 -0.9172625 0.102747 -1.536973 -1.7072044 1.415e+00  
## 25 -0.163826 -1.1779885 0.184477 -0.970070 -1.3457498 1.368e+00  
## 26 0.115416 -0.4906042 0.400630 -2.016044 -1.6799798 6.463e-01  
## 27 0.116477 -1.2381682 0.205142 -0.806616 -1.1586685 1.212e+00  
## 28 0.272889 -0.8448843 0.514171 -1.278838 -0.2383453 -1.009e-01  
## 29 1.109124 -0.6470398 0.867803 -1.116751 -0.5730147 9.030e-02  
## 30 0.143996 -0.6954003 0.389211 -1.572562 -1.6577785 1.695e-01  
## 31 -0.589435 -0.8132748 -0.207114 -0.937827 -0.8495386 5.148e-01  
## 32 0.324720 -0.9797477 0.629757 -1.174475 -1.0639061 1.026e+00  
## 33 0.444689 -1.0388669 0.404809 -1.206620 -1.5821105 9.641e-01  
## 34 0.815021 -0.5231039 0.758110 -1.554512 -1.1992928 3.075e-01  
## 35 0.747365 -0.7761469 0.551179 -1.301209 -1.0238532 2.954e-01  
## 36 0.608766 -1.2221140 0.434780 -0.737826 -1.1809338 5.207e-01  
## 37 1.325857 -1.0611769 1.411559 -1.037269 -0.4615671 -1.202e+00  
## 38 -0.106448 -0.7226207 -0.467242 -0.834543 -0.4483915 4.632e-01  
## 39 -0.052028 -0.9347325 -0.020086 -0.789167 -0.4973989 8.080e-01  
## 40 -0.333475 -1.1678479 -0.234959 -0.502604 -1.1886633 9.856e-01  
## 41 -0.965571 -0.3274771 0.118681 -2.487706 -1.5724932 7.826e-01  
## 42 1.131369 -1.5028682 0.633411 -0.427730 -1.1813847 1.151e+00  
## 43 0.712727 -1.3891237 0.656154 -0.272620 -0.9635960 1.198e+00  
## 44 0.667845 -1.1146426 0.691073 -0.654376 -0.8317251 1.495e+00  
## 45 1.226353 -1.3570258 1.030392 -0.472816 -0.9220796 3.632e-01  
## 46 2.170120 -1.7948542 0.711748 0.646176 -1.1906193 1.310e+00  
## 47 2.197712 -1.7295094 0.592105 0.375414 -1.1768220 1.136e+00  
## 48 2.065113 -1.6326364 0.937001 -0.120805 -1.0301801 1.830e+00  
## 49 -0.085299 -0.2858372 0.917402 -1.163402 -1.7069319 5.423e-01  
## 50 1.461448 -1.0841529 1.069740 -0.919266 -0.7657387 1.248e+00  
## 51 2.940324 -1.4133975 1.056998 0.024851 -0.9972854 2.714e-01  
## 52 2.864009 -1.7167887 1.088268 0.383682 -0.8842228 4.460e-01  
## 53 2.732655 -1.6483632 1.566352 0.008651 -0.8980457 9.817e-01  
## 54 1.049581 -1.3252967 0.174854 -0.163834 -1.5248414 1.231e+00  
## 55 2.340724 -1.4097184 1.242784 -0.372201 -0.7846627 1.102e+00  
## 56 2.043038 -1.4351983 0.998477 -0.388175 -1.3154273 8.148e-01  
## 57 -0.194630 -1.6353918 0.163468 -1.314995 -2.6157863 2.272e+00  
## 58 2.391296 -1.5019969 0.971345 -1.139168 -2.4764381 1.153e+00  
## 59 2.897947 -1.2842860 1.274697 -0.278247 -0.8162229 6.292e-01  
## 60 2.330912 -0.7303674 1.545455 -1.621440 -1.0817248 1.358e-01  
## 61 2.228011 -1.1117161 0.936637 -0.211038 -0.6482965 6.291e-01  
## 62 2.499764 -1.0236593 1.004282 -0.412058 -1.1764347 -2.558e-01  
## 63 2.538279 -1.0194133 1.118224 -0.673777 -0.9143826 -1.909e-01  
## 64 3.504068 -1.8401024 1.274033 0.861579 -0.0868620 1.636e+00  
## 65 3.290043 -1.6275557 1.008506 0.613893 -0.8657099 1.252e+00  
## 66 2.169059 -0.8071599 0.922388 -0.830690 -0.5788264 3.883e-01  
## 67 2.960096 -1.5097332 0.873893 0.332024 -0.6097100 3.595e-01  
## 68 1.305952 -1.2413524 0.673371 -0.857442 -1.3174213 9.195e-01  
## 69 3.865878 -1.2987340 1.671143 -0.222331 -0.2880731 2.901e-02  
## 70 2.203424 -0.3989313 0.669369 -0.441220 -0.5119972 4.309e-01  
## 71 3.293981 -0.5929686 1.177113 -0.190039 0.3112189 9.183e-02  
## 72 2.897739 -0.7384129 1.057681 -0.637348 -0.9921800 5.173e-01  
## 73 3.324075 -0.3317656 1.562882 -0.560853 0.1585231 2.521e-03  
## 74 2.456445 -0.7629276 1.121251 -0.309161 0.1454667 1.253e+00  
## 75 2.764973 -0.3495941 0.948594 0.306394 -0.3634262 -6.201e-01  
## 76 2.906904 -0.7631795 1.317267 0.776097 1.0061021 7.545e-01  
## 77 1.887059 -0.0062427 0.976642 -0.608213 0.0286138 -6.641e-01  
## 78 2.562606 -0.4992686 0.677044 0.403653 0.0243367 -8.792e-01  
## 79 2.811375 -0.2322898 1.080844 -0.208108 0.6636722 -1.138e-01  
## 80 3.955086 -0.3913712 1.576041 0.081658 0.4390197 -6.468e-01  
## 81 2.209398 -0.8711106 0.805092 0.851054 0.9921926 1.031e-01  
## 82 3.262684 -0.7722602 1.222801 0.508649 0.2075760 -2.205e-01  
## 83 2.824843 -0.6950210 1.000158 0.412230 -0.2450164 -1.130e+00  
## 84 2.457732 -0.4276606 1.127785 0.040819 0.6480680 -6.579e-01  
## 85 4.636654 -1.3158844 1.855479 1.264534 0.5124345 -3.354e-01  
## 86 2.955805 -0.4247117 1.330581 0.885628 0.8887511 -6.074e-01  
## 87 2.177676 -0.4244235 1.042641 0.129313 0.0678558 -2.466e-01  
## 88 1.614342 -0.4430341 0.042971 0.302785 -0.0395662 3.386e-01  
## 89 1.299814 -0.0888735 0.592887 -0.320989 0.7677704 7.997e-05  
## 90 2.102498 -0.1117444 0.632658 -0.475038 -0.2246042 -5.335e-01  
## 91 4.338552 -1.3090536 1.865664 0.891975 0.6453048 4.883e-03  
## 92 5.252102 -1.4363654 1.917637 1.834370 0.4256338 -8.894e-01  
## 93 2.020104 -0.1782094 0.808092 0.442605 0.2729675 -4.098e-01  
## 94 2.169894 -0.4458562 0.783215 0.167805 -0.0386722 -7.762e-01  
## 95 2.812511 -0.4053069 1.205696 -0.047081 0.7809425 -5.767e-02  
## 96 2.393128 -0.6636428 0.534788 0.705505 0.1529529 -3.784e-01  
## 97 4.070973 -1.4559570 1.426432 1.682920 0.9655790 -2.062e-02  
## 98 3.393094 -0.6815673 1.791292 0.151272 0.8598442 1.180e-01  
## 99 3.412596 -0.7638437 1.509662 0.271098 0.8832965 7.147e-01  
## 100 2.337773 -0.9758591 0.877874 1.137328 0.9263114 -4.669e-01  
## 101 5.417307 -1.0999270 2.400590 1.712880 1.8229550 -1.800e-01  
## 102 4.824578 -0.6593896 2.079738 1.466079 1.6637835 -5.269e-01  
## 103 3.314803 -0.7023467 1.269700 0.927614 1.0344595 1.169e-01  
## 104 2.322515 -1.4459267 0.844846 0.536950 -0.2438500 1.806e+00  
## 105 3.301494 -1.4450690 1.096022 0.627335 0.2818717 1.178e+00  
## 106 6.958537 -2.3680155 2.528045 3.141611 1.6919792 6.625e-01  
## 107 4.830915 -1.9788964 1.679508 1.800206 0.8073010 1.047e+00  
## 108 4.795271 -2.0094465 1.384544 1.795910 0.1614055 9.479e-01  
## 109 3.377384 -1.6112518 0.863477 1.136984 0.1051208 9.280e-01  
## 110 4.956394 -1.9154589 1.492536 1.893800 0.2233465 8.693e-01  
## 111 3.779247 -1.1344695 1.634063 0.929169 1.7628404 1.033e+00  
## 112 2.943378 -1.8760260 0.643263 1.408154 0.7724600 1.767e+00  
## 113 3.481494 -2.0332734 1.537353 1.926365 2.1493754 3.287e+00  
## 114 2.971016 -1.5024325 0.754000 0.604745 -0.1253897 1.834e+00  
## 115 -0.664684 -0.3506911 -0.552741 -1.083308 -1.7785423 9.084e-01  
## 116 -0.578155 0.2559888 -0.018870 -1.216391 -0.3246286 4.263e-01  
## 117 -0.351469 0.5226713 -0.300185 -0.666113 -0.2269858 -4.359e-02  
## 118 0.955552 -0.8788350 0.510517 -0.619865 -0.5319990 -3.094e-02  
## 119 -1.946737 -1.0054524 0.499600 -1.613132 -1.6471963 1.146e+00  
## 120 -1.889945 -1.2075391 0.484168 -1.543428 -1.7165677 1.365e+00  
## 121 -1.874917 -1.2947671 0.598237 -0.539390 0.6477562 1.141e+00  
## 122 -2.158204 -1.2938733 -0.127408 -0.599225 -0.8844692 5.342e-01  
## 123 -1.560778 -1.1606508 0.049001 -0.459814 -0.7638941 6.145e-01  
## 124 -1.465610 -1.0912796 0.231598 -0.615412 -0.6318680 8.066e-01  
## 125 -2.110978 -1.2005859 0.423767 -0.672033 -0.1971848 1.571e+00  
## 126 -1.637449 -1.2205250 -0.062972 -0.331394 -0.8065954 9.276e-01  
## 127 -2.060529 -1.1724672 0.498421 -0.739714 -0.1630980 1.531e+00  
## 128 -0.892326 -1.6513524 0.598773 -0.494548 -0.3550252 7.241e-01  
## 129 -1.917393 -1.2734889 -0.024730 -0.465632 -0.0238679 9.649e-01  
## 131 -1.569941 -1.3487048 -0.147665 -0.784974 -0.9509199 1.587e+00  
## 132 -1.966290 -1.2679171 0.269413 -0.257731 0.6034286 1.168e+00  
## 133 -1.498786 -1.1645896 -0.094531 -0.505480 -0.8996420 1.211e-01  
## 134 -1.522849 -1.7072006 0.377905 -1.331863 -1.7484189 9.874e-01  
## 135 -0.409307 -1.8033488 0.567711 -0.265802 -0.8871223 9.614e-02  
## 136 -1.825122 -1.0933558 -0.072548 -0.744966 -0.5540162 1.168e+00  
## 137 -1.499136 -1.1543963 -0.015623 -0.281981 -0.2634326 7.207e-01  
## 138 -2.144543 -1.5073222 -0.116475 -0.234007 -0.0807964 1.799e+00  
## 139 -1.503501 -1.4138524 0.064563 0.271868 1.3726606 1.064e+00  
## 140 -2.372083 -1.5220613 -0.020687 0.501764 2.3670744 -6.056e-02  
## 141 -1.874855 -1.2308464 0.280545 -0.015055 1.3109721 1.832e+00  
## 142 -2.067526 -1.8466669 0.215041 0.433783 1.1578744 2.582e+00  
## 143 -1.666899 -1.3262059 0.233926 -0.114362 0.8557291 8.305e-01  
## 144 -2.134639 -1.1519019 0.079454 -0.337870 0.8959123 2.131e+00  
## 145 -1.720724 -1.3859703 -0.033630 0.758422 2.4707446 2.428e+00  
## 146 -1.958227 -1.6731085 0.314317 0.460721 1.9557373 1.991e+00  
## 147 -0.062752 -1.2991483 0.690877 0.207728 0.1445641 3.136e-01  
## 148 -0.089384 -1.1077380 0.714095 -0.305020 0.0122934 2.542e-01  
## 149 0.626500 -1.2952239 1.352438 0.518470 1.2025858 3.100e-01  
## 150 -0.390751 -1.2654857 0.975920 0.093827 0.6187298 2.437e-02  
## 151 -1.051754 -1.9047706 0.814614 1.542125 4.7027608 1.259e+00  
## 152 -1.182726 -1.9968414 0.662427 1.703851 4.6814468 1.452e+00  
## 153 -2.135709 -2.1200259 0.933080 2.034461 6.4934112 3.370e+00  
## 154 -1.929949 -2.0070166 0.714182 1.341013 4.3439063 2.715e+00  
## 155 -0.556181 -1.3216994 0.655547 -0.806823 -1.0014476 -1.344e-01  
## 156 -0.116972 -1.4124412 0.755352 -0.029151 0.2940860 -1.136e+00  
## 157 -0.559049 -1.1682738 1.283042 -0.479359 0.3848648 -1.208e+00  
## 158 0.284321 -1.5868948 0.781917 -0.091934 -0.6392398 -6.669e-01  
## 159 -0.711199 -0.9266174 -0.454110 -0.024544 1.2297909 1.503e+00  
## 160 -0.945960 -0.8554454 -0.383074 -0.257632 0.9400740 1.443e+00  
## 161 -1.188024 -0.8507114 -0.393768 -0.098914 1.6757231 1.678e+00  
## 162 -0.787804 -0.7737191 0.720591 -1.078129 1.0848579 -9.938e-01  
## 163 -1.477399 -1.2249042 0.401801 -0.729734 0.4342889 1.491e+00  
## 164 -1.980645 -0.8635616 -0.457144 0.200408 2.7650702 3.106e+00  
## 165 -1.636132 -1.0878929 -0.545788 0.005186 1.1014215 1.678e+00  
## 166 -1.630372 -1.0832749 0.165121 -0.329900 0.7664653 1.489e+00  
## 167 -1.747818 -1.0849748 -0.043384 0.117707 2.3610018 2.110e+00  
## 168 -1.068588 -1.2736732 0.119389 -0.452122 -0.6467297 -3.427e-01  
## 169 -0.851368 -1.9249633 0.027357 0.724775 0.1349733 -1.804e+00  
## 170 -0.036932 -2.0860551 0.913674 1.624066 2.7900264 3.213e+00  
## 171 0.066740 -2.3742954 1.345658 1.836533 3.5419819 4.328e+00  
## 172 0.654163 -1.6832909 0.316023 0.629042 -0.2985103 1.185e+00  
## 173 -0.149848 -2.0916190 1.000362 0.230123 0.7922770 4.018e+00  
## 174 2.108766 -2.0800967 1.281428 1.503559 0.6486399 1.873e+00  
## 175 -0.550821 -1.5483902 0.041624 -1.286640 -2.1118692 2.842e+00  
## 176 -0.764666 -1.2698975 0.161236 -1.423598 -1.7108666 1.687e+00  
## 177 4.443692 -2.3096108 1.448525 2.168911 0.3237687 -1.583e+00  
## 178 -0.357183 0.0450801 -1.230629 -0.002369 -0.0001492 1.113e-01  
## 179 -0.158225 -1.1880321 -0.463294 0.484936 0.3284185 -1.900e+00  
## 180 0.821830 -0.9269432 -0.433050 0.755267 0.1826080 -1.334e+00  
## 181 0.004637 -0.6003654 -0.682350 -0.409135 -0.7434557 -1.000e+00  
## 182 -0.908882 -0.8755709 -0.954434 -0.173174 -1.2843518 -2.807e+00  
## 183 -1.457745 -0.8918737 -1.197634 -0.656796 -1.0695945 -1.657e+00  
## 184 -1.022371 -0.9073606 -1.028574 -0.615835 -1.2189578 -5.923e-01  
## 185 -0.085805 -0.6808896 -0.760218 -0.837603 -1.1475708 -1.610e-01  
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## 187 -0.694647 -0.5660395 -1.222607 -0.113956 -0.8039836 -2.282e-01  
## 188 -0.572841 -0.5495656 -0.800366 -0.704267 -1.2296429 -1.413e-01  
## 189 -1.891585 -1.1843348 -0.873167 -0.403441 -0.7367849 -9.423e-01  
## 190 -1.025198 -0.6541607 -1.108166 -0.194668 -0.1862389 1.408e+00  
## 191 -0.216995 -0.8485240 -0.894567 -0.225494 -0.6722700 -7.406e-01  
## 192 0.361614 -0.8364812 -0.607863 -0.166504 -1.1651666 1.917e-01  
## 193 -0.655324 -0.6395942 -1.168507 -0.914134 -1.5499005 4.269e-01  
## 194 -0.487371 -0.6962929 -1.057304 -0.563676 -1.3053663 1.370e-01  
## 195 -0.442378 -0.5444833 -0.794161 -0.225474 0.2405358 2.295e-01  
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## 197 0.863710 -1.0240774 -0.390982 0.188841 -0.8870297 4.087e-01  
## 198 -0.175234 -0.6095151 -0.826259 -0.401575 -0.7535002 -3.972e-01  
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## 202 0.183720 -0.9079511 -0.742533 -0.357532 -1.4396835 5.398e-01  
## 203 0.023911 -0.8563327 -0.774726 -0.530338 -1.4021620 6.002e-01  
## 204 -0.032453 -0.5889954 -0.964476 -0.206870 -0.7724430 -7.008e-01  
## 205 -0.590359 -0.7768570 -1.010626 -0.752493 -1.9637582 1.732e-01  
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## 207 -0.502607 -0.6608596 -1.143705 -0.503827 -0.6486867 2.068e-01  
## 208 -1.054834 -0.8822520 -1.197571 -0.429239 -0.9352241 -1.558e+00  
## 209 -0.500975 -0.7364121 -0.704023 -0.557993 -0.2436807 3.782e-01  
## 210 -1.079693 -0.8082660 -0.994272 -0.457682 -0.8499161 -4.509e-01  
## 211 -0.918357 -0.9020978 -0.997848 -0.650434 -1.0647736 -4.546e-02  
## 212 -1.516940 -0.9343226 -1.258481 -0.824711 -1.3314183 5.503e-01  
## 213 -0.218649 -1.0748719 -0.677803 -0.104788 -1.0303154 -5.700e-01  
## 214 -1.110775 -0.8330866 -1.079016 -0.507249 -0.9988775 -1.033e+00  
## 215 -0.337695 -1.0025106 -0.756417 -0.462542 -1.0203209 -6.661e-01  
## 216 -0.423870 -0.8489860 -1.046239 -0.494848 -1.0661427 -3.055e-01  
## 217 -0.608017 -1.1537989 -0.834699 -0.439253 -0.5238114 -1.291e+00  
## 218 -0.745918 -1.0082653 -0.879567 -0.564231 -0.9318701 -3.680e-01  
## 219 -0.027517 -1.0334506 -0.489122 -0.501919 -0.9024723 -1.101e+00  
## 220 3.089094 -0.4880844 0.554357 1.116120 0.8881529 -1.320e+00  
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## 222 2.094214 -0.2828071 0.227358 0.533875 0.3320117 -5.372e-01  
## 223 2.297646 -0.2800175 0.435517 0.675528 0.5623405 -9.306e-01  
## 224 2.597604 -0.5998227 0.627130 1.247395 0.8080864 -5.262e-01  
## 225 2.413307 -0.4023218 0.386490 0.756371 0.4403713 -3.766e-01  
## 226 1.187114 -0.1264329 0.208297 -0.664984 -0.5828911 -1.390e+00  
## 227 2.648866 -0.6459613 0.868635 0.835941 0.7279404 -8.762e-01  
## 228 3.123687 -0.5742337 1.111249 0.542790 0.0580576 -1.234e+00  
## 229 3.262513 -0.7242488 0.929426 0.919063 0.2369814 -1.967e+00  
## 230 3.205943 -0.4438923 0.877199 1.007239 0.1851872 -1.905e+00  
## 231 2.334854 -0.2601266 0.589181 0.703549 0.4078176 -1.245e+00  
## 232 2.406805 -0.4500872 0.329980 1.142698 0.4108487 -1.567e+00  
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## 250 1.342563 -0.5431832 0.051136 0.013756 -0.2894151 -1.224e+00  
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## 252 2.010435 -0.9562763 0.270574 1.036920 0.3854565 -1.943e+00  
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## 254 3.595145 -1.2893031 0.830063 1.674568 0.4056070 -1.053e+00  
## 255 4.119633 -1.3096740 0.956953 1.833811 0.5523713 -1.270e+00  
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## 257 3.447217 -1.1333992 0.880765 1.336939 0.4201493 -6.805e-01  
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## 259 -2.080721 0.9226105 2.569774 0.049462 -0.5509618 -6.205e-01  
## 260 -1.801003 1.0491684 2.069409 0.156334 -0.4441654 -1.453e+00  
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## 263 -1.517034 1.4489050 1.445874 1.957408 -1.5678809 2.325e-01  
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## 310 -0.907640 1.8466005 0.636819 1.453621 -1.1220645 4.213e-01  
## 311 -0.472561 0.9469863 -0.256168 0.103243 -0.2622332 8.086e-02  
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## 317 -1.126962 1.3329610 0.129810 1.003143 -1.1550315 1.246e-01  
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## 323 -0.201221 0.8424920 0.124571 -0.817614 0.2844306 -2.752e-01  
## 324 -0.997535 1.1725917 0.587704 -0.089076 -0.6874624 -6.136e-02  
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## 336 -0.780201 1.3911418 1.696507 -0.728932 1.4991662 4.351e-01  
## 337 -2.553912 1.9612669 1.794252 1.780526 -1.1149652 1.924e+00  
## 338 -0.529426 1.5430740 1.479223 -1.736280 1.7431978 -1.004e+00  
## 339 -1.694862 1.9667716 1.728276 0.786640 -1.1607954 5.861e-01  
## 340 -0.632537 1.3542590 1.417111 -1.602453 0.9231138 -3.751e-01  
## 341 -0.493206 1.1411287 0.520496 -1.526234 1.1297972 -6.496e-01  
## 342 -0.854386 1.9758430 2.178733 -1.363405 0.5755803 -1.907e-01  
## 343 -0.947275 1.4962244 1.117505 -1.821890 1.9888081 -4.834e-01  
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## 351 -1.312459 1.7710086 0.924194 1.346019 -1.8069561 2.251e-01  
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## 356 -1.589024 1.5019763 0.573073 0.074799 0.9427747 -3.228e-01  
## 357 -0.928088 1.7793815 0.566171 0.933865 -0.6485681 2.621e-01  
## 358 -0.910418 1.0954132 -0.079468 -0.017809 0.1744381 3.068e-01  
## 359 -0.539734 0.8413911 -0.617525 0.155091 -0.1165467 2.564e-01  
## 360 -1.284746 1.3372261 0.619992 1.016496 -0.5407985 2.702e-01  
## 361 -1.071500 1.4421762 0.513514 0.611662 -0.6508086 3.520e-01  
## 362 -1.162466 1.5853620 0.468061 0.779629 0.1028996 9.432e-02  
## 363 -0.112894 1.8213585 0.746815 -0.104292 0.2698998 2.954e-01  
## 364 -1.241173 1.5111388 0.679917 -1.059354 0.9519366 6.128e-02  
## 365 -0.782539 1.3800961 0.373616 -0.571621 0.4182791 6.789e-01  
## 366 -1.046210 1.3476999 0.374958 -0.738217 0.7787556 8.455e-01  
## 367 -0.686311 1.2452164 0.564493 -0.433592 0.1759177 4.267e-01  
## 368 -1.021786 1.4239238 0.144390 0.747839 0.9358572 1.053e+00  
## 369 -1.383421 1.3909611 0.682978 -0.292240 0.1063681 7.595e-01  
## 370 -0.895176 1.4578615 0.116769 -0.229836 0.8655909 9.151e-01  
## 371 -0.825156 1.0546500 0.050290 -0.711618 0.3594240 2.062e-01  
## 372 -0.704196 1.3507185 0.032355 -0.209069 0.4982303 6.803e-01  
## 373 -0.772169 1.4452757 0.488099 -0.848237 0.9225156 -5.508e-01  
## 374 -0.672602 1.3861033 0.317163 -0.835950 1.2087749 5.721e-01  
## 375 -0.827956 1.3419279 0.307014 -0.517379 0.6552593 4.233e-01  
## 376 -1.143352 1.4114418 0.363175 -0.175428 0.4066627 4.278e-01  
## 377 -0.741279 1.4570958 0.577987 -0.265586 0.3642990 7.548e-01  
## 378 -0.631945 1.3157483 0.012609 -0.583996 0.8019631 1.472e-01  
## 379 -0.356539 0.8294958 0.160919 -1.123302 0.0424204 -3.041e-01  
## 380 -0.377845 0.9462193 0.280099 -1.067844 0.0812535 -2.998e-01  
## 381 -0.288496 0.6966775 -0.519147 -0.632471 0.2427163 -4.559e-01  
## 382 -0.336455 0.7617990 -0.209279 -0.643996 0.0724460 -4.724e-01  
## 383 -0.279165 0.6692751 -0.298164 -0.688968 0.0941881 -6.421e-01  
## 384 -0.990340 1.0986187 -0.002637 -0.837841 1.3167393 -2.941e-01  
## 385 -0.920086 0.9831911 -0.202493 -0.582761 0.4548954 1.717e-01  
## 386 -0.354286 1.1390101 0.206504 -0.803693 1.8385388 -3.551e-01  
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## 388 -0.897264 1.1095765 0.364641 -1.357047 1.4470818 -6.045e-02  
## 389 -0.373397 1.3613543 0.519966 -0.196948 0.1629762 5.255e-01  
## 390 -0.784632 1.2437987 0.516682 -0.995011 0.3203869 -8.423e-02  
## 391 -1.106279 1.2432217 -0.218991 -0.182132 0.8042584 6.003e-01  
## 392 -1.173448 1.6080554 0.552704 -0.562913 0.7634742 -1.242e-01  
## 393 -0.436386 0.7933524 -0.391448 0.111086 1.1404741 3.694e-01  
## 394 -1.220822 1.1899261 0.081144 -0.361177 0.3024289 1.170e-01  
## 395 -1.050645 0.7100210 1.545219 -2.173395 2.5062439 -1.253e+00  
## 396 -1.050597 0.9508096 1.900268 -2.618888 2.0127036 -2.322e+00  
## 397 -0.725408 0.7888740 1.490122 -2.572893 1.8854527 -2.295e+00  
## 398 -0.427774 1.1167750 1.848261 -2.579494 1.4351169 -1.248e+00  
## 399 -0.096789 1.4577047 2.191052 -2.441768 1.3907216 -1.518e+00  
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## 402 -0.527859 1.5832085 2.663381 -1.549719 0.2709388 -1.036e+00  
## 403 -1.154651 1.5315847 2.393402 -1.553246 1.5538147 -3.858e-01  
## 404 -0.093815 1.5480601 3.237130 -2.796834 0.7819013 -1.138e+00  
## 405 -0.465808 2.0059020 3.202631 -2.052269 0.1561381 -9.261e-01  
## 406 -0.529852 1.8036761 3.025780 -2.210857 0.8830280 -1.426e+00  
## 407 -0.429549 1.4199103 2.716270 -2.114696 0.6647504 -1.292e+00  
## 408 0.428938 1.3225815 2.435491 -2.994318 1.4748362 -1.202e+00  
## 409 -0.877389 1.3276170 2.230545 -0.970723 0.8616373 -2.301e-01  
## 410 -1.148889 0.5802289 1.250407 -1.828651 2.9620549 -1.772e+00  
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## 413 0.436798 1.4335202 1.753613 -2.436770 1.2129198 -6.403e-01  
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## 416 0.571981 0.9860448 0.997482 -1.363887 0.8948871 -6.271e-01  
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## 419 0.446983 0.5164713 0.504189 -0.736454 0.8812465 8.982e-02  
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## 421 -0.301904 1.4613003 0.625552 -0.883527 1.4608584 6.446e-01  
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## 425 0.304668 1.3700335 1.200757 -1.129138 0.1042878 -1.696e-03  
## 426 -0.924022 -0.0708461 -0.965845 0.317835 0.2294541 -8.503e-01  
## 427 -0.569902 0.4728502 -0.879090 1.079612 0.6694960 -3.765e-01  
## 428 -1.005478 0.8385035 0.360668 -1.473449 -0.7888164 9.166e-01  
## 429 -0.916229 0.5888437 -1.106685 1.045234 0.4942766 -1.437e-01  
## 430 -0.616043 2.0142301 1.419822 0.975190 -1.2498732 7.393e-01  
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## 432 0.416022 1.4538995 0.443824 -0.439852 1.0061204 3.494e-01  
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## 445 -0.526390 0.8131502 -0.780996 0.774209 0.2220263 2.589e-01  
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## 447 -0.962081 1.3036820 -1.454129 1.411270 0.7824757 2.677e-01  
## 448 -0.281872 -0.1762455 -0.655531 0.576205 1.4362542 4.911e-01  
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## 452 -0.085480 0.3063067 -0.701909 0.652908 1.8780478 1.136e+00  
## 453 -0.396453 0.3168218 -0.838035 0.306341 0.5315699 -6.282e-03  
## 454 -0.456909 0.2202040 -1.037029 0.605648 0.0654420 1.198e-01  
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## 456 -0.615006 0.5992854 -1.349724 0.800934 0.0263453 1.788e-01  
## 457 -0.943430 0.8090462 -1.169008 1.127402 0.2442251 2.887e-01  
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## 468 -0.913933 0.4359292 -1.260005 0.673537 0.1352913 -4.719e-02  
## 469 -0.138350 0.3452163 -0.649956 0.650029 -0.0981547 -6.946e-01  
## 470 -0.142747 -0.0845281 -0.697141 1.081550 0.8349230 -2.568e-01  
## 471 -0.886565 0.5307952 -1.168801 0.726473 0.8683791 3.750e-01  
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## 477 -0.549759 0.4038076 -1.137123 0.844256 0.3383546 -2.605e-01  
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## 486 -0.980053 0.5003802 -1.079244 0.903943 0.2273676 4.486e-01  
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## 495 -0.458835 1.6651558 -0.159075 0.009129 0.6887483 1.242e+00  
## 496 0.167621 1.3631671 0.702599 -1.769971 1.1987447 1.024e+00  
## 497 -0.909857 0.4662897 -1.199741 0.778487 -0.1909438 1.574e-02  
## 498 -0.320544 0.8827393 -0.816889 0.123666 0.2121379 4.516e-01  
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## 504 -0.378602 1.1468149 -0.972163 0.473426 0.7869203 6.825e-01  
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## 509 -0.742050 0.2680615 -1.222444 0.329111 0.4024453 2.585e-01  
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## 511 -0.745166 0.3117485 -1.021474 0.486523 -0.5866425 1.696e-01  
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## 514 -1.292768 1.1751245 -0.841724 0.345180 1.5653386 2.056e+00  
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## 516 -0.326201 1.4479375 -0.814534 0.578404 0.7708101 7.628e-01  
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## 526 -0.542029 0.5212488 -1.316734 0.499694 0.6651362 -2.018e-01  
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## 531 -0.298571 0.3388435 -1.265078 0.702290 0.6354278 3.387e-01  
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## 547 -0.827155 0.6200895 -1.291885 0.708443 -0.1118300 5.224e-01  
## 548 -0.291330 0.3717666 -1.001519 -0.366837 0.8992899 -3.855e-01  
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## 550 -0.687068 0.4977628 -1.158492 0.881985 0.8208663 6.247e-01  
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## 557 -0.488173 0.4973320 -1.220052 0.477603 0.5914203 3.042e-01  
## 558 0.221359 0.2888813 -1.205599 0.123721 0.4063345 -6.684e-01  
## 559 -0.359322 0.5486750 -1.383920 -0.170891 0.2840763 -9.960e-02  
## 560 0.051461 0.3499831 -1.261911 0.086283 0.4720209 -4.985e-01  
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## 563 -0.760413 0.6916626 -1.706055 0.728843 0.3154442 -1.331e+00  
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## 565 -0.552350 0.2935237 -1.603933 -0.009596 0.4640449 7.879e-01  
## 566 -0.497028 0.6164261 -1.171963 0.703866 0.7131072 1.286e-01  
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## 568 -0.775310 0.4380074 -1.362260 0.697118 1.2949654 1.856e-01  
## 569 -0.397828 0.2518698 -1.172601 0.071318 0.9689438 5.002e-01  
## 570 -0.384705 0.0528791 -0.877555 -0.015450 0.4548073 4.008e-01  
## 571 -0.738074 0.5318548 -1.699369 0.172351 0.7763337 2.732e-01  
## 572 -0.770469 -0.0146542 -1.106252 0.057209 0.2046332 3.277e-01  
## 573 -0.811209 0.1833428 -1.431324 -0.389415 0.2978813 5.520e-01  
## 574 -1.082813 0.5164216 -1.558587 0.229824 0.4828966 1.052e+00  
## 575 -0.582339 0.2372338 -1.095580 0.067595 -0.4413117 2.443e-01  
## 576 -0.827223 0.3597614 -1.132657 0.628303 1.0977028 1.536e-02  
## 577 -0.839036 0.2406077 -1.484178 -0.140004 0.5296721 6.150e-01  
## 578 -0.685128 0.4138927 -1.476529 0.258312 -0.0106199 2.738e-02  
## 579 -0.761956 0.4300291 -1.546726 0.201914 0.3954071 5.620e-01  
## 580 -0.068618 0.7217582 -1.247810 0.407362 0.2344546 -2.651e-01  
## 581 0.182277 0.4642259 -1.348607 0.147500 0.2571546 5.461e-01  
## 582 -0.950820 0.6906453 -1.592170 -0.291817 1.8428856 2.451e+00  
## 583 -0.677743 0.8821483 -1.259499 0.364279 1.0982103 8.656e-01  
## 584 -0.577708 0.8013485 0.130739 -1.106397 -0.2495064 -3.681e-01  
## 585 -0.829210 1.1908142 0.193044 -0.521825 0.0655483 -5.248e-01  
## 586 -0.618734 1.4279881 -0.326664 0.394796 -0.0363876 -6.601e-02  
## 587 -0.547615 0.9787128 0.057142 -0.649940 0.0121741 -1.831e-01  
## 588 -0.745298 0.4347770 -0.451217 -0.414398 -0.7373138 1.447e-01  
## 589 -0.472507 0.8506787 -0.298515 0.242102 -0.1674503 -2.744e-01  
## 590 0.061301 0.1611699 0.460106 0.653542 0.0005711 -7.439e-02  
## 591 -0.289628 0.7738033 -0.197338 -0.379679 0.3041203 -1.407e-02  
## 592 -1.331778 1.1125585 0.261128 0.696459 -0.7320384 -7.769e-01  
## 593 -0.610764 0.5534170 -0.533365 0.246921 0.3221180 -4.683e-01  
## 594 0.171033 0.2851804 -0.180898 0.265873 -0.3083217 -1.586e-01  
## 595 -0.162297 0.6254074 0.392238 0.151004 -0.9571457 -1.525e-01  
## 596 -0.141438 0.4180472 0.077192 -0.688085 -0.4425035 -4.442e-01  
## 597 -0.800096 0.3617596 0.025216 -0.537095 0.1524771 -5.510e-01  
## 598 -0.444340 0.6708851 0.016064 -0.810365 -0.3840024 -5.670e-03  
## 599 0.394741 0.4250646 0.129464 0.116263 -0.4038123 -1.045e+00  
## 600 -0.506096 0.7238804 -0.347918 -0.369351 -0.2585894 -1.802e-01  
## 601 -0.896869 0.9179006 -0.672872 -0.059078 0.0752417 7.437e-01  
## 602 -0.841520 0.5248835 0.350954 0.407708 -0.8052512 -1.779e-01  
## 603 -0.848314 0.5945716 -0.232327 0.483999 -0.9989052 4.572e-01  
## 604 -0.095009 0.2109809 -0.197979 -0.398252 -0.4464047 7.989e-02  
## 605 -0.322331 0.3220241 -0.072642 -0.368114 -0.4215533 1.385e-01  
## 606 -0.278501 0.2159573 -0.168418 -0.412104 -0.5648393 -1.224e-01  
## 607 -0.067247 0.1149067 0.047692 -0.236978 -0.5131195 -6.488e-02  
## 608 -0.083364 0.2604383 0.153649 -0.464285 -0.6048483 -1.066e-01  
## 609 -0.519070 0.4706815 -0.214131 -0.924631 -0.3170442 6.277e-03  
## 610 -0.534617 0.0728006 -0.091839 -0.325754 -0.4719955 5.398e-01  
## 611 -0.621600 0.3441441 -0.338205 -0.459684 0.0093675 -4.697e-02  
## 612 -1.069258 0.0736196 0.130057 -0.600686 -1.1330274 1.948e-01  
## 613 -0.072361 -0.0382067 -0.504178 -0.183639 -0.4923457 -6.832e-01  
## 614 -0.062039 0.0127426 0.006870 0.734430 -0.5210675 -2.630e-01  
## 615 -0.834348 0.3646372 -0.463940 -0.651643 -0.2408819 -5.742e-01  
## 616 -0.729422 0.5456845 -0.525896 -0.439570 -0.0557881 -4.477e-01  
## 617 -0.555544 -0.0680374 0.080241 -0.219444 -0.7183063 -4.673e-01  
## 618 -0.670801 0.5095511 0.421512 -1.917861 0.2913835 -4.784e-01  
## 619 0.353267 0.1057252 1.334727 -0.737774 -0.4941270 -5.563e-01  
## 620 -0.581348 0.8932217 -0.433371 -0.321789 0.6939663 7.332e-01  
## 621 -1.150537 0.5287502 0.124509 -1.132108 1.2153695 1.882e-01  
## 622 -0.562034 0.5524471 0.570689 -1.618784 0.5350006 -1.006e-01  
## 623 -0.733889 0.2342029 -0.209474 -1.193806 -0.0599366 -3.827e-01  
## 624 -0.672608 0.2839466 -0.013746 -1.174957 0.0599006 -5.030e-01  
## 625 -0.789550 0.7799553 0.228405 -1.335072 0.4474111 -4.245e-01  
## 626 -0.347572 0.3467975 0.305347 -1.191025 0.1044286 -4.264e-01  
## 627 -0.945743 0.9769606 -0.511920 -0.194060 -0.0333513 1.205e+00  
## 628 -0.812302 0.9876465 -0.390837 -0.268442 0.0763982 2.548e-01  
## 629 -0.782987 0.5256417 -0.384707 -0.439532 -0.1319395 6.776e-02  
## 630 -0.971923 0.6721481 -0.693775 -0.372412 -0.3053537 -1.645e-01  
## 631 -0.881823 0.6674650 -0.482059 -0.676114 -0.3228851 -6.461e-02  
## 632 -1.860423 0.6154643 -0.018092 -0.760503 0.3525922 1.166e+00  
## 633 -1.226336 0.4407216 -0.164468 -1.528699 0.2024100 4.413e-01  
## 634 -0.481254 0.5191740 -0.310322 -0.697378 -0.1481849 2.009e-01  
## 635 -0.624387 0.4496337 -0.521800 -0.607904 -0.3419845 7.357e-01  
## 636 -0.952211 0.8689710 -0.585824 -0.413415 0.5604051 8.153e-01  
## 637 -0.894387 0.8834135 -0.312401 0.062291 -0.7897221 6.399e-01  
## 638 -0.881262 0.7088227 -0.502675 -0.351243 -0.4406804 7.685e-01  
## 639 -0.855629 0.6375848 -0.805158 -0.246854 -0.4296297 1.224e-01  
## 640 -0.680776 0.4768544 -0.442842 -0.916683 -0.1466841 1.168e-01  
## 641 -0.639315 0.4808651 -0.484937 -0.705579 -0.3325024 -1.791e-01  
## 642 -0.839977 0.3900265 -0.638125 -0.762536 -0.2636140 8.395e-01  
## 643 -0.956196 0.6754688 -0.491930 -0.562350 -0.2557430 8.124e-01  
## 644 -1.011056 0.4540997 -0.582734 -0.833455 0.0714977 6.335e-01  
## 645 -1.064232 0.3788702 -0.195602 -1.176541 -0.0515326 2.124e-01  
## 646 -1.190627 0.2883666 -0.382607 -1.064273 0.1950658 1.025e+00  
## 647 -0.788274 0.2518118 -0.447210 -0.585203 0.0669827 5.027e-01  
## 648 -0.985008 0.6910757 -0.600696 -0.531880 0.3007105 8.056e-01  
## 649 -0.987983 0.2780343 -0.404239 -0.965386 -0.4205795 6.858e-01  
## 650 -0.878678 0.3597150 -0.205350 -1.235847 0.7158773 3.892e-01  
## 651 -0.861050 0.1922812 -0.760276 -0.650811 -0.1782196 8.224e-01  
## 652 -0.743927 0.5332004 -0.554986 -0.579517 -0.3505039 3.624e-01  
## 653 -0.362078 0.4876775 0.311248 -1.527125 -0.2088327 -3.950e-01  
## 654 -0.961882 0.3703068 -0.539915 -0.799013 -0.0052157 8.202e-01  
## 655 -1.090776 0.3308998 -0.541365 -1.242972 -0.7293566 4.501e-01  
## 656 -0.762670 0.2292657 -0.396972 -0.825697 -0.5224801 6.739e-01  
## 657 -0.842700 -0.1159099 -0.474338 -0.862391 -0.9831494 2.416e-01  
## 658 -0.636175 0.2616833 -0.378277 -0.901412 -0.2148889 2.935e-01  
## 659 0.361956 -0.2511820 0.054166 -1.280421 -0.3838593 5.691e-01  
## 660 -0.913968 -0.5626302 -0.907651 -0.072555 -0.1954267 -4.381e-01  
## 661 -0.603640 -1.2069242 -0.314903 -0.688100 -1.1649701 -9.255e-01  
## 662 -0.334195 -1.3142341 -0.221976 -0.659389 -1.6553912 -9.215e-01  
## 663 -0.769578 -1.0251291 -0.661320 -0.406206 -1.0464046 -1.258e+00  
## 664 -1.521152 -0.6504100 -1.336565 -0.798005 -1.0678098 -7.039e-01  
## 665 -0.372692 -1.2779595 -0.450920 -0.629741 -1.3531212 -1.301e+00  
## 666 0.084837 -1.0509340 -0.120758 0.502782 0.8401195 -6.086e-01  
## 667 -0.683177 -1.0892618 -0.639578 -0.324480 -0.9655594 -8.169e-01  
## 668 -0.619496 -0.9577339 -0.552668 -0.633885 -1.1216269 -1.050e+00  
## 669 -0.612129 -0.9163704 -0.534396 -0.709787 -1.3335670 -7.576e-01  
## 670 -1.448051 -0.6104044 -1.047397 -0.081897 0.1842086 -1.184e+00  
## 671 -0.434551 -0.1616639 -1.002971 0.298055 0.1850252 -2.228e-01  
## 672 -0.838885 -0.4465380 -1.075577 0.024503 -0.4503876 -3.984e-01  
## 673 -0.493271 -0.4290449 -0.905693 -0.025058 -0.1372957 -6.685e-01  
## 674 -0.230026 -0.1743225 -1.126891 0.522985 0.2475068 -2.682e-01  
## 675 -0.946618 -0.5910921 -0.905906 0.399277 1.2013807 -8.515e-01  
## 676 -0.804718 -0.9630247 -0.797985 -0.512813 -1.1141060 -1.228e+00  
## 677 -0.896675 0.1878231 -1.501120 0.045260 0.4458436 -1.034e-01  
## 678 -0.411421 0.3756306 -1.419131 -0.347610 0.8721434 3.806e-01  
## 679 -0.860091 -0.3561541 -1.106316 -0.156542 -0.6123922 -4.344e-01  
## 680 -0.921852 -0.9250234 -0.861800 -0.602893 -1.1815836 -5.363e-01  
## 681 -0.973644 -0.8366362 -0.703922 -0.893904 -1.9112280 2.483e-01  
## 682 -0.552939 0.4317577 -1.628741 -0.153952 0.0203523 2.088e-01  
## 683 -0.482523 0.4354474 -1.637023 -0.020021 0.0209481 -2.217e-02  
## 684 -0.166184 -0.1229361 -0.948386 0.032537 1.4774443 1.360e+00  
## 685 -0.580535 0.1540735 -1.699212 -0.386331 -0.0194880 -2.861e-01  
## 686 -0.253366 -0.3742922 -0.833781 -0.521437 -0.6904045 3.409e-01  
## 687 -0.477975 -0.2877490 -1.164287 -0.125075 -0.5973119 1.109e-02  
## 688 -0.245615 -1.2967237 -0.485403 -0.201924 -0.6993077 -9.981e-01  
## 689 -1.827897 -0.9479060 -0.844309 -0.141250 0.6913468 3.174e-01  
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## 691 -0.315923 0.0967281 -1.350051 -0.137915 -0.2449854 -3.516e-01  
## 692 -0.239524 -0.1517737 -1.224309 -0.360487 -0.5376321 -3.017e-01  
## 694 -0.831739 -0.8615074 -0.751635 -0.509295 -1.0204141 -4.985e-01  
## 695 -0.780396 0.2874223 -1.324271 0.398766 0.8867375 7.603e-01  
## 696 -0.197729 -0.0668063 -1.513311 -0.156168 0.4975383 4.854e-01  
## 697 -0.660411 -0.3679383 -0.996944 -0.187338 -0.1454658 -6.448e-01  
## 698 -0.926862 0.0212998 -1.278779 -0.451742 -0.6520538 4.963e-01  
## 699 -1.050661 -0.8085922 -0.921096 -0.051479 -0.1487248 1.087e+00  
## 700 -0.199650 -0.3474334 -0.992832 -0.249394 -0.0233022 6.959e-01  
## 701 0.153001 -0.3816676 -0.761934 0.070118 -0.3822298 -4.505e-01  
## 702 -0.680462 0.4012365 -1.405272 0.299929 -0.5886775 3.264e-01  
## 703 -0.903651 0.3400370 -1.283294 0.196115 -0.7826215 3.687e-01  
## 704 -0.172637 -0.5252454 -0.916311 -0.546643 -0.8057243 -1.400e-01  
## 705 -0.468340 0.3297749 -1.316728 0.123927 0.2730520 -5.197e-01  
## 706 0.368502 -0.3515684 -0.815663 0.362919 -0.5633251 -8.557e-01  
## 707 0.284546 -0.3071787 -0.836251 0.285123 0.1459723 4.782e-01  
## 708 -1.112944 0.1778474 -1.719311 0.027524 2.2150647 2.403e+00  
## 709 -0.582350 0.2928593 -1.377737 0.330626 0.0575207 5.634e-01  
## 710 -0.539207 -0.1922812 -0.748869 -0.138869 0.6580545 1.328e+00  
## 711 -0.158565 -0.2366598 -1.123860 -0.353960 -0.3818745 6.186e-03  
## 712 0.122704 -0.6383879 -0.761313 -0.243279 -1.0013040 1.451e-01  
## 713 0.353023 -0.6228689 -0.818960 -0.173956 -0.5891213 4.431e-01  
## 714 -0.969876 -0.5646511 -1.252920 -0.483606 -0.7600440 1.935e-01  
## 715 -0.928550 -0.5444829 -1.319206 -0.848112 -1.5073234 7.758e-01  
## 716 -0.316797 -0.1999690 -0.956219 -0.337764 -0.4406850 2.027e-01  
## 717 -0.797502 0.1636147 -1.583829 -0.163666 0.5787866 1.182e+00  
## 718 -0.971175 -0.4801359 -1.332433 -0.846961 -1.2888575 6.005e-01  
## 719 -0.988609 -0.6722262 -0.897171 -0.716961 -1.2041903 1.152e+00  
## 720 -0.023889 -0.8285825 -0.812058 -0.161118 -0.7743215 1.072e-01  
## 721 -0.585387 -0.4852336 -1.315377 -0.723009 -1.1173842 -1.221e-01  
## 722 -1.255735 -0.6866507 -1.102975 -0.308748 0.2341538 9.407e-01  
## 723 -0.630715 -0.3018352 -1.278009 -0.664695 -0.5463080 -6.297e-01  
## 724 -0.696586 -0.4727767 -1.013498 -0.889902 -0.8789194 -4.826e-01  
## 725 0.216000 -0.7829811 -0.686593 -0.757818 -1.7707378 2.681e-01  
## 726 -0.807714 -0.7527325 -0.715331 -0.546042 -0.8120332 7.248e-01  
## 727 -0.377700 -0.5670706 -0.887502 -0.605897 -1.0551080 5.391e-01  
## 728 -0.296781 -0.6915515 -0.874083 -0.432666 -0.4353743 -8.433e-02  
## 729 -0.661656 -0.6793883 -1.186966 -0.843518 -1.5263121 5.318e-02  
## 730 -0.747213 -0.7234679 -1.171894 -0.606858 -1.1029906 -1.201e+00  
## 731 0.796053 -1.1065316 -0.237243 0.021854 -0.9107872 -1.348e+00  
## 732 0.666570 -0.7616906 -0.473901 -0.150646 -0.5872238 -1.216e+00  
## 733 -0.101692 -0.8612192 -0.757373 -0.351600 -0.8040733 -7.418e-01  
## 734 0.203791 -0.8293179 -0.676438 -0.124387 -0.6807860 -8.282e-01  
## 735 -0.097261 -0.8718854 -0.712477 -0.260251 -0.7866675 -9.976e-01  
## 736 -1.532988 -0.9783471 -0.922287 0.322758 0.4837573 -5.081e+00  
## 737 -0.469989 -0.6125806 -0.786976 0.919870 0.7173320 -3.109e+00  
## 738 -0.559875 -1.1546442 -0.365432 0.113220 -0.2138173 -1.903e+00  
## 739 -0.590726 -0.5548054 -0.794851 0.441073 0.2305220 -1.337e+00  
## 740 -0.648682 -0.8481129 -0.628038 0.324405 0.8352393 -1.538e+00  
## 741 -1.572179 -0.7354717 -0.708993 0.351017 1.1721964 -1.171e+00  
## 742 -0.543194 -0.5123533 -0.837212 0.635261 0.5806407 -1.295e+00  
## 743 -0.540060 -0.4696696 -1.228143 0.226189 0.6620429 -3.881e+00  
## 744 -0.757807 -0.4812625 -0.680530 0.705764 1.1982910 -1.685e+00  
## 745 -0.211724 -0.2247304 -1.005830 0.328512 0.7879503 -2.205e+00  
## 746 -0.903031 -1.2902228 -0.348811 0.411872 0.4230270 -1.765e+00  
## 747 -0.298997 -0.0214525 -1.091641 0.692393 0.8460120 -1.498e+00  
## 748 -0.674417 -1.1780494 -0.482703 -0.058925 -0.3288134 -1.259e+00  
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## 750 -0.638006 -1.4979201 -0.120731 0.228990 -0.1107034 -2.143e+00  
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## 752 -1.411442 -1.1552832 -0.701922 0.252633 0.0499505 -3.349e+00  
## 753 -1.799990 -1.3737083 -0.731248 0.624274 0.7862464 -4.589e+00  
## 754 -1.012177 -1.4811497 -0.160576 0.463650 0.5494427 -2.167e+00  
## 755 -1.398978 -1.2123035 -0.597601 -0.350946 -0.8336916 -1.950e+00  
## 756 -1.834416 -1.0363909 -0.814983 -0.128243 -0.0408321 -1.412e+00  
## 757 -0.637146 -0.5313038 -1.045579 0.394341 0.6791223 -1.749e+00  
## 758 -1.089659 -1.2828713 -0.243748 0.306884 0.8484647 -1.336e+00  
## 759 -0.185715 -0.6033306 -0.827870 0.680610 1.0883174 -1.835e+00  
## 760 -0.856548 -1.1158027 -0.440755 0.012575 -0.3721772 -1.839e+00  
## 761 -1.715154 -1.0750391 -0.985937 -0.307875 -0.8638852 -9.201e-01  
## 762 -1.771212 -0.5315368 -1.160889 0.444002 0.1244010 -2.281e+00  
## 763 -0.843433 -0.7048592 -0.958853 0.289324 -0.0003238 -2.723e+00  
## 764 -0.658449 -0.8014812 -0.698619 0.630917 0.6223906 -1.872e+00  
## 765 -0.697581 -0.7426325 -0.428327 0.547266 0.6140722 -4.766e-01  
## 766 0.180407 -0.4295819 -0.556399 0.953012 0.9504451 -1.838e+00  
## 767 -0.525453 0.7426102 -0.954670 -0.328322 0.2888209 3.307e-01  
## 768 -0.251943 0.5843085 -0.703301 0.041775 -0.0896600 3.820e-02  
## 769 -0.118965 0.9515868 -0.567207 -0.176934 0.8092467 -7.189e-01  
## 770 -0.551172 0.5327698 -1.484571 0.221821 0.4304619 2.009e-01  
## 771 -0.048850 -0.4162609 -1.062023 0.244971 -0.1178187 1.951e-01  
## 772 -0.382448 0.6670035 -1.020204 0.098923 0.4169952 4.988e-01  
## 773 -0.784709 0.0820734 -1.323396 0.230021 1.1489810 -1.212e+00  
## 774 -0.661877 -0.1485795 -1.067130 -0.278707 -0.2747706 -2.674e-01  
## 775 -0.696276 0.7435421 -1.187681 0.138022 0.1946948 9.334e-01  
## 776 -0.278175 0.8621994 -1.112846 -0.053177 0.4771439 6.017e-01  
## 777 -0.018280 0.6319845 -1.123757 0.052176 0.3018527 -3.047e-01  
## 778 -0.528921 0.6644070 -1.170346 0.063223 0.0332169 5.148e-01  
## 779 -0.399527 0.8217370 -1.191904 0.246479 0.4996149 2.885e-01  
## 780 -1.084219 0.6716254 -0.943101 0.063158 0.8259192 1.488e+00  
## 781 -0.099570 0.4003905 -1.000886 -0.001907 0.9266407 6.206e-01  
## 782 0.006710 0.4486687 -1.208238 -0.278515 0.0964412 1.727e-01  
## 783 -0.099004 0.4065151 -1.041565 -0.422971 0.7642991 2.445e-01  
## 784 -0.309704 0.3559451 -1.311815 -0.417654 0.0487959 6.877e-01  
## 785 -0.880621 0.4885739 -1.364432 -0.010491 -0.0679962 4.331e-01  
## 786 0.400907 0.6169358 -0.971781 -0.411265 0.5897106 -3.320e-02  
## 787 -0.339020 0.7131550 -1.497325 -0.211498 1.7537035 8.015e-01  
## 788 -0.803357 0.2770125 -1.489011 -0.335577 -0.0720169 4.270e-01  
## 789 0.907967 -0.1805091 -0.174835 0.187043 0.0654321 -1.340e+00  
## 790 0.885751 -0.1264518 -0.175516 0.228604 0.7957756 -1.809e-02  
## 791 0.548312 0.0814535 -0.595766 -0.074476 0.4186378 9.247e-02  
## 792 -0.451912 0.4107055 -1.908931 -0.416213 0.3282471 9.011e-01  
## 793 -0.240291 -0.0162484 -1.135164 -0.032884 0.1310800 -1.542e-01  
## 794 0.878796 -0.0514597 -0.398459 -0.107322 0.5475400 3.248e-01  
## 795 0.163274 -0.0554463 -0.543681 0.106103 0.1203443 -4.877e-02  
## 796 1.490086 -0.1166683 0.008432 -0.040088 0.1740052 -2.873e-01  
## 797 0.299972 0.1835770 -0.563181 -0.268795 0.0290600 -2.221e-01  
## 798 0.924007 -0.0682157 -0.332000 0.100942 0.4318843 -2.141e-01  
## 799 1.467536 -0.2816638 -0.105622 0.254584 0.1113821 -7.140e-01  
## 800 1.484820 -0.2659154 -0.031397 0.731275 0.7206333 -4.716e-01  
## 801 0.629497 0.0006088 -0.383182 -0.111887 -0.3010558 -6.773e-02  
## 802 0.834614 0.1166546 -0.299889 0.224335 -0.0292150 -4.845e-01  
## 803 -0.275805 -0.0577755 -0.878098 -0.389863 0.1814405 -3.456e-01  
## 804 0.464464 -0.1343729 -0.395564 -0.323618 0.1193538 -3.236e-01  
## 805 1.158726 -0.2793635 -0.280965 0.137512 0.0860872 -1.902e-01  
## 806 1.332333 -0.5578539 -0.148783 0.391994 0.0554725 -5.906e-01  
## 807 -0.420762 0.1027575 -1.037662 -0.416442 -0.0480842 -1.823e-01  
## 808 -0.274997 0.5518430 -1.262006 -0.135488 0.0283367 6.679e-01  
## 809 -0.346777 -0.0355314 -1.083721 0.422574 -0.3116517 5.289e-01  
## 810 -0.358321 0.0129219 -1.151116 -0.377525 0.0974658 9.118e-02  
## 811 -0.546150 0.0317134 -1.059758 -0.554679 -0.6281169 -6.135e-02  
## 812 -0.645254 0.2311380 -0.963475 -0.141442 -0.5938868 3.616e-01  
## 813 -0.164882 -0.1231616 -0.788508 -0.274531 -0.0239852 1.190e-01  
## 814 -0.377559 0.1834608 -0.979105 -0.693683 -0.2703618 5.458e-01  
## 815 -0.874317 0.2962790 -1.316794 -0.731577 -0.2652289 6.512e-01  
## 816 -0.544572 -0.2214297 -1.036017 -0.496285 -0.8055072 1.554e-01  
## 817 -0.276055 0.0225896 -0.779912 -0.377519 -0.1085054 8.933e-03  
## 818 0.001701 -0.0322000 -1.187702 -0.356409 0.3040192 2.966e-01  
## 819 -0.243537 0.0325533 -0.832370 -0.394807 -0.0468104 1.735e-01  
## 820 -0.254483 -0.0957519 -0.671743 -0.444939 -0.0776280 -1.443e-01  
## 821 -0.618526 0.3887248 -0.769984 -0.953682 -0.3740927 5.836e-01  
## 822 -0.997609 -0.0657406 -0.838390 -1.038145 -0.6006571 5.333e-01  
## 823 -1.067508 -0.1725100 -0.998053 -1.072924 -0.8351712 6.629e-01  
## 824 -0.201174 -0.1831920 -0.696313 -0.271700 -0.5620549 1.705e-01  
## 825 0.010231 -0.3130838 -0.702046 -0.419288 -0.0924022 -3.961e-02  
## 826 0.992413 -0.3868395 -0.650185 0.136667 0.2003015 2.843e-02  
## 827 -0.522564 0.0696700 -0.954229 -0.794789 -0.6360917 4.114e-01  
## 828 -0.024066 0.0314150 -0.798684 -0.644911 0.1360974 1.113e-01  
## 829 -0.005607 -0.2461451 -0.263657 -1.125038 -0.2952994 -4.458e-01  
## 830 -0.133554 0.2442481 -1.086996 -0.518486 -0.0343588 3.480e-01  
## 831 -0.615456 -0.1061960 -0.811336 -0.777444 -0.9039757 1.377e-01  
##   
##   
## Site constraints (linear combinations of constraining variables)  
##   
## CCA1 CA1 CA2 CA3 CA4 CA5  
## 1 -0.443760 0.1440687 0.866089 -1.314607 0.1472995 -4.140e-01  
## 2 0.214904 -0.1870920 1.098654 -0.932128 -1.7091009 -5.652e-02  
## 3 0.332000 -0.0148379 1.290541 -1.382764 -0.6786310 -1.107e+00  
## 4 0.112445 0.4294046 1.078341 -0.973632 -1.7687943 3.699e-01  
## 5 0.258815 0.0268321 0.747740 -1.603702 -0.7801355 5.233e-01  
## 6 0.229541 -0.0048560 1.344968 -1.911929 -0.4132985 -4.599e-01  
## 7 -0.487671 -0.2511527 0.765467 -1.125998 -1.3993256 2.804e-01  
## 8 0.244178 -0.3939139 0.998241 -0.939556 -0.5067101 3.749e-02  
## 9 0.053897 -0.1899741 0.456569 -1.671911 -0.8962494 3.379e-02  
## 10 0.493007 -0.4732518 0.362202 -1.068140 -0.8032787 1.011e+00  
## 11 0.536918 -0.5916775 0.968397 -1.268853 -0.5264319 -1.662e-01  
## 12 0.141719 -0.4161824 0.992305 -1.701732 -1.1482768 2.771e-01  
## 13 0.302726 -0.4578208 1.643043 -1.639196 0.3376550 -6.584e-01  
## 14 -0.019287 -0.7953698 0.227146 -1.240667 -1.1135086 1.326e+00  
## 15 0.566192 -0.1907744 0.362880 -1.885530 -0.9598723 5.003e-01  
## 16 0.214904 -0.4995241 1.029781 -1.483884 -0.9685692 -5.327e-03  
## 17 0.361274 -0.9556221 1.341365 -0.497939 -0.3773456 3.053e-01  
## 18 -0.458397 -0.2842294 1.374356 -0.213935 -1.0645958 -3.591e-01  
## 19 0.668651 -0.1260996 0.357144 -1.486751 -0.4211206 -1.392e-01  
## 20 -0.165657 -0.9736513 1.191372 -0.552366 -0.6508043 4.306e-01  
## 21 0.185630 -0.4778016 0.413332 -1.291698 -0.7443950 2.494e-01  
## 22 -0.238842 -0.6330364 0.963736 -0.888315 -0.4737751 3.647e-01  
## 23 -0.092472 -1.1977490 0.529151 -0.017368 -0.7096422 1.768e-01  
## 24 -0.033924 -0.9172625 0.102747 -1.536973 -1.7072044 1.415e+00  
## 25 -0.107109 -1.1779885 0.184477 -0.970070 -1.3457498 1.368e+00  
## 26 0.493007 -0.4906042 0.400630 -2.016044 -1.6799798 6.463e-01  
## 27 0.097808 -1.2381682 0.205142 -0.806616 -1.1586685 1.212e+00  
## 28 0.156356 -0.8448843 0.514171 -1.278838 -0.2383453 -1.009e-01  
## 29 0.244178 -0.6470398 0.867803 -1.116751 -0.5730147 9.030e-02  
## 30 0.141719 -0.6954003 0.389211 -1.572562 -1.6577785 1.695e-01  
## 31 0.083171 -0.8132748 -0.207114 -0.937827 -0.8495386 5.148e-01  
## 32 0.068534 -0.9797477 0.629757 -1.174475 -1.0639061 1.026e+00  
## 33 0.112445 -1.0388669 0.404809 -1.206620 -1.5821105 9.641e-01  
## 34 0.317363 -0.5231039 0.758110 -1.554512 -1.1992928 3.075e-01  
## 35 0.288089 -0.7761469 0.551179 -1.301209 -1.0238532 2.954e-01  
## 36 0.258815 -1.2221140 0.434780 -0.737826 -1.1809338 5.207e-01  
## 37 0.229541 -1.0611769 1.411559 -1.037269 -0.4615671 -1.202e+00  
## 38 0.346637 -0.7226207 -0.467242 -0.834543 -0.4483915 4.632e-01  
## 39 -0.253479 -0.9347325 -0.020086 -0.789167 -0.4973989 8.080e-01  
## 40 -0.253479 -1.1678479 -0.234959 -0.502604 -1.1886633 9.856e-01  
## 41 0.346637 -0.3274771 0.118681 -2.487706 -1.5724932 7.826e-01  
## 42 -0.019287 -1.5028682 0.633411 -0.427730 -1.1813847 1.151e+00  
## 43 -0.194931 -1.3891237 0.656154 -0.272620 -0.9635960 1.198e+00  
## 44 0.141719 -1.1146426 0.691073 -0.654376 -0.8317251 1.495e+00  
## 45 0.127082 -1.3570258 1.030392 -0.472816 -0.9220796 3.632e-01  
## 46 0.244178 -1.7948542 0.711748 0.646176 -1.1906193 1.310e+00  
## 47 0.478370 -1.7295094 0.592105 0.375414 -1.1768220 1.136e+00  
## 48 0.361274 -1.6326364 0.937001 -0.120805 -1.0301801 1.830e+00  
## 49 0.844295 -0.2858372 0.917402 -1.163402 -1.7069319 5.423e-01  
## 50 0.478370 -1.0841529 1.069740 -0.919266 -0.7657387 1.248e+00  
## 51 0.844295 -1.4133975 1.056998 0.024851 -0.9972854 2.714e-01  
## 52 0.551555 -1.7167887 1.088268 0.383682 -0.8842228 4.460e-01  
## 53 0.580829 -1.6483632 1.566352 0.008651 -0.8980457 9.817e-01  
## 54 0.829658 -1.3252967 0.174854 -0.163834 -1.5248414 1.231e+00  
## 55 0.961390 -1.4097184 1.242784 -0.372201 -0.7846627 1.102e+00  
## 56 0.668651 -1.4351983 0.998477 -0.388175 -1.3154273 8.148e-01  
## 57 0.507644 -1.6353918 0.163468 -1.314995 -2.6157863 2.272e+00  
## 58 1.078486 -1.5019969 0.971345 -1.139168 -2.4764381 1.153e+00  
## 59 1.034575 -1.2842860 1.274697 -0.278247 -0.8162229 6.292e-01  
## 60 0.990664 -0.7303674 1.545455 -1.621440 -1.0817248 1.358e-01  
## 61 0.756473 -1.1117161 0.936637 -0.211038 -0.6482965 6.291e-01  
## 62 1.063849 -1.0236593 1.004282 -0.412058 -1.1764347 -2.558e-01  
## 63 0.946753 -1.0194133 1.118224 -0.673777 -0.9143826 -1.909e-01  
## 64 1.107760 -1.8401024 1.274033 0.861579 -0.0868620 1.636e+00  
## 65 1.341952 -1.6275557 1.008506 0.613893 -0.8657099 1.252e+00  
## 66 0.990664 -0.8071599 0.922388 -0.830690 -0.5788264 3.883e-01  
## 67 1.254130 -1.5097332 0.873893 0.332024 -0.6097100 3.595e-01  
## 68 1.341952 -1.2413524 0.673371 -0.857442 -1.3174213 9.195e-01  
## 69 1.546870 -1.2987340 1.671143 -0.222331 -0.2880731 2.901e-02  
## 70 1.620055 -0.3989313 0.669369 -0.441220 -0.5119972 4.309e-01  
## 71 1.620055 -0.5929686 1.177113 -0.190039 0.3112189 9.183e-02  
## 72 1.620055 -0.7384129 1.057681 -0.637348 -0.9921800 5.173e-01  
## 73 1.620055 -0.3317656 1.562882 -0.560853 0.1585231 2.521e-03  
## 74 1.634692 -0.7629276 1.121251 -0.309161 0.1454667 1.253e+00  
## 75 1.459048 -0.3495941 0.948594 0.306394 -0.3634262 -6.201e-01  
## 76 1.459048 -0.7631795 1.317267 0.776097 1.0061021 7.545e-01  
## 77 1.473685 -0.0062427 0.976642 -0.608213 0.0286138 -6.641e-01  
## 78 1.473685 -0.4992686 0.677044 0.403653 0.0243367 -8.792e-01  
## 79 1.327315 -0.2322898 1.080844 -0.208108 0.6636722 -1.138e-01  
## 80 1.327315 -0.3913712 1.576041 0.081658 0.4390197 -6.468e-01  
## 81 1.444411 -0.8711106 0.805092 0.851054 0.9921926 1.031e-01  
## 82 1.415137 -0.7722602 1.222801 0.508649 0.2075760 -2.205e-01  
## 83 1.415137 -0.6950210 1.000158 0.412230 -0.2450164 -1.130e+00  
## 84 1.415137 -0.4276606 1.127785 0.040819 0.6480680 -6.579e-01  
## 85 1.415137 -1.3158844 1.855479 1.264534 0.5124345 -3.354e-01  
## 86 1.400500 -0.4247117 1.330581 0.885628 0.8887511 -6.074e-01  
## 87 1.400500 -0.4244235 1.042641 0.129313 0.0678558 -2.466e-01  
## 88 1.400500 -0.4430341 0.042971 0.302785 -0.0395662 3.386e-01  
## 89 1.371226 -0.0888735 0.592887 -0.320989 0.7677704 7.997e-05  
## 90 1.356589 -0.1117444 0.632658 -0.475038 -0.2246042 -5.335e-01  
## 91 1.429774 -1.3090536 1.865664 0.891975 0.6453048 4.883e-03  
## 92 1.429774 -1.4363654 1.917637 1.834370 0.4256338 -8.894e-01  
## 93 1.312678 -0.1782094 0.808092 0.442605 0.2729675 -4.098e-01  
## 94 1.298041 -0.4458562 0.783215 0.167805 -0.0386722 -7.762e-01  
## 95 1.371226 -0.4053069 1.205696 -0.047081 0.7809425 -5.767e-02  
## 96 1.444411 -0.6636428 0.534788 0.705505 0.1529529 -3.784e-01  
## 97 1.444411 -1.4559570 1.426432 1.682920 0.9655790 -2.062e-02  
## 98 1.327315 -0.6815673 1.791292 0.151272 0.8598442 1.180e-01  
## 99 1.327315 -0.7638437 1.509662 0.271098 0.8832965 7.147e-01  
## 100 1.444411 -0.9758591 0.877874 1.137328 0.9263114 -4.669e-01  
## 101 1.488322 -1.0999270 2.400590 1.712880 1.8229550 -1.800e-01  
## 102 1.429774 -0.6593896 2.079738 1.466079 1.6637835 -5.269e-01  
## 103 1.502959 -0.7023467 1.269700 0.927614 1.0344595 1.169e-01  
## 104 1.663966 -1.4459267 0.844846 0.536950 -0.2438500 1.806e+00  
## 105 1.942068 -1.4450690 1.096022 0.627335 0.2818717 1.178e+00  
## 106 1.956705 -2.3680155 2.528045 3.141611 1.6919792 6.625e-01  
## 107 1.971342 -1.9788964 1.679508 1.800206 0.8073010 1.047e+00  
## 108 1.956705 -2.0094465 1.384544 1.795910 0.1614055 9.479e-01  
## 109 1.868883 -1.6112518 0.863477 1.136984 0.1051208 9.280e-01  
## 110 1.854246 -1.9154589 1.492536 1.893800 0.2233465 8.693e-01  
## 111 2.117712 -1.1344695 1.634063 0.929169 1.7628404 1.033e+00  
## 112 2.015253 -1.8760260 0.643263 1.408154 0.7724600 1.767e+00  
## 113 2.161623 -2.0332734 1.537353 1.926365 2.1493754 3.287e+00  
## 114 2.073801 -1.5024325 0.754000 0.604745 -0.1253897 1.834e+00  
## 115 0.141719 -0.3506911 -0.552741 -1.083308 -1.7785423 9.084e-01  
## 116 -0.019287 0.2559888 -0.018870 -1.216391 -0.3246286 4.263e-01  
## 117 -0.092472 0.5226713 -0.300185 -0.666113 -0.2269858 -4.359e-02  
## 118 -0.121746 -0.8788350 0.510517 -0.619865 -0.5319990 -3.094e-02  
## 119 -2.858862 -1.0054524 0.499600 -1.613132 -1.6471963 1.146e+00  
## 120 -2.858862 -1.2075391 0.484168 -1.543428 -1.7165677 1.365e+00  
## 121 -2.844225 -1.2947671 0.598237 -0.539390 0.6477562 1.141e+00  
## 122 -2.844225 -1.2938733 -0.127408 -0.599225 -0.8844692 5.342e-01  
## 123 -2.902773 -1.1606508 0.049001 -0.459814 -0.7638941 6.145e-01  
## 124 -2.844225 -1.0912796 0.231598 -0.615412 -0.6318680 8.066e-01  
## 125 -2.888136 -1.2005859 0.423767 -0.672033 -0.1971848 1.571e+00  
## 126 -2.844225 -1.2205250 -0.062972 -0.331394 -0.8065954 9.276e-01  
## 127 -2.888136 -1.1724672 0.498421 -0.739714 -0.1630980 1.531e+00  
## 128 -2.946684 -1.6513524 0.598773 -0.494548 -0.3550252 7.241e-01  
## 129 -2.741766 -1.2734889 -0.024730 -0.465632 -0.0238679 9.649e-01  
## 131 -2.507574 -1.3487048 -0.147665 -0.784974 -0.9509199 1.587e+00  
## 132 -2.741766 -1.2679171 0.269413 -0.257731 0.6034286 1.168e+00  
## 133 -2.712492 -1.1645896 -0.094531 -0.505480 -0.8996420 1.211e-01  
## 134 -3.005232 -1.7072006 0.377905 -1.331863 -1.7484189 9.874e-01  
## 135 -3.005232 -1.8033488 0.567711 -0.265802 -0.8871223 9.614e-02  
## 136 -2.741766 -1.0933558 -0.072548 -0.744966 -0.5540162 1.168e+00  
## 137 -2.741766 -1.1543963 -0.015623 -0.281981 -0.2634326 7.207e-01  
## 138 -2.727129 -1.5073222 -0.116475 -0.234007 -0.0807964 1.799e+00  
## 139 -2.756403 -1.4138524 0.064563 0.271868 1.3726606 1.064e+00  
## 140 -2.756403 -1.5220613 -0.020687 0.501764 2.3670744 -6.056e-02  
## 141 -2.668581 -1.2308464 0.280545 -0.015055 1.3109721 1.832e+00  
## 142 -2.668581 -1.8466669 0.215041 0.433783 1.1578744 2.582e+00  
## 143 -2.595396 -1.3262059 0.233926 -0.114362 0.8557291 8.305e-01  
## 144 -2.668581 -1.1519019 0.079454 -0.337870 0.8959123 2.131e+00  
## 145 -2.434389 -1.3859703 -0.033630 0.758422 2.4707446 2.428e+00  
## 146 -2.536848 -1.6731085 0.314317 0.460721 1.9557373 1.991e+00  
## 147 -2.653944 -1.2991483 0.690877 0.207728 0.1445641 3.136e-01  
## 148 -2.566122 -1.1077380 0.714095 -0.305020 0.0122934 2.542e-01  
## 149 -2.829588 -1.2952239 1.352438 0.518470 1.2025858 3.100e-01  
## 150 -2.829588 -1.2654857 0.975920 0.093827 0.6187298 2.437e-02  
## 151 -2.405116 -1.9047706 0.814614 1.542125 4.7027608 1.259e+00  
## 152 -2.405116 -1.9968414 0.662427 1.703851 4.6814468 1.452e+00  
## 153 -2.390479 -2.1200259 0.933080 2.034461 6.4934112 3.370e+00  
## 154 -2.522211 -2.0070166 0.714182 1.341013 4.3439063 2.715e+00  
## 155 -2.566122 -1.3216994 0.655547 -0.806823 -1.0014476 -1.344e-01  
## 156 -2.522211 -1.4124412 0.755352 -0.029151 0.2940860 -1.136e+00  
## 157 -2.610033 -1.1682738 1.283042 -0.479359 0.3848648 -1.208e+00  
## 158 -2.273383 -1.5868948 0.781917 -0.091934 -0.6392398 -6.669e-01  
## 159 -1.804999 -0.9266174 -0.454110 -0.024544 1.2297909 1.503e+00  
## 160 -1.804999 -0.8554454 -0.383074 -0.257632 0.9400740 1.443e+00  
## 161 -1.848910 -0.8507114 -0.393768 -0.098914 1.6757231 1.678e+00  
## 162 -1.717177 -0.7737191 0.720591 -1.078129 1.0848579 -9.938e-01  
## 163 -2.214835 -1.2249042 0.401801 -0.729734 0.4342889 1.491e+00  
## 164 -1.863547 -0.8635616 -0.457144 0.200408 2.7650702 3.106e+00  
## 165 -2.097739 -1.0878929 -0.545788 0.005186 1.1014215 1.678e+00  
## 166 -2.302657 -1.0832749 0.165121 -0.329900 0.7664653 1.489e+00  
## 167 -1.497623 -1.0849748 -0.043384 0.117707 2.3610018 2.110e+00  
## 168 -2.170924 -1.2736732 0.119389 -0.452122 -0.6467297 -3.427e-01  
## 169 -1.512260 -1.9249633 0.027357 0.724775 0.1349733 -1.804e+00  
## 170 -0.941417 -2.0860551 0.913674 1.624066 2.7900264 3.213e+00  
## 171 -1.234157 -2.3742954 1.345658 1.836533 3.5419819 4.328e+00  
## 172 -0.970691 -1.6832909 0.316023 0.629042 -0.2985103 1.185e+00  
## 173 -1.146335 -2.0916190 1.000362 0.230123 0.7922770 4.018e+00  
## 174 -0.253479 -2.0800967 1.281428 1.503559 0.6486399 1.873e+00  
## 175 -0.326664 -1.5483902 0.041624 -1.286640 -2.1118692 2.842e+00  
## 176 -0.326664 -1.2698975 0.161236 -1.423598 -1.7108666 1.687e+00  
## 177 0.712562 -2.3096108 1.448525 2.168911 0.3237687 -1.583e+00  
## 178 0.580829 0.0450801 -1.230629 -0.002369 -0.0001492 1.113e-01  
## 179 -0.575493 -1.1880321 -0.463294 0.484936 0.3284185 -1.900e+00  
## 180 -0.107109 -0.9269432 -0.433050 0.755267 0.1826080 -1.334e+00  
## 181 -0.458397 -0.6003654 -0.682350 -0.409135 -0.7434557 -1.000e+00  
## 182 -0.341301 -0.8755709 -0.954434 -0.173174 -1.2843518 -2.807e+00  
## 183 -0.224205 -0.8918737 -1.197634 -0.656796 -1.0695945 -1.657e+00  
## 184 -0.268116 -0.9073606 -1.028574 -0.615835 -1.2189578 -5.923e-01  
## 185 0.449096 -0.6808896 -0.760218 -0.837603 -1.1475708 -1.610e-01  
## 186 -0.268116 -0.7742640 -0.998322 -0.651980 -1.3382786 -5.692e-01  
## 187 0.390548 -0.5660395 -1.222607 -0.113956 -0.8039836 -2.282e-01  
## 188 0.258815 -0.5495656 -0.800366 -0.704267 -1.2296429 -1.413e-01  
## 189 -0.194931 -1.1843348 -0.873167 -0.403441 -0.7367849 -9.423e-01  
## 190 0.522281 -0.6541607 -1.108166 -0.194668 -0.1862389 1.408e+00  
## 191 0.478370 -0.8485240 -0.894567 -0.225494 -0.6722700 -7.406e-01  
## 192 0.536918 -0.8364812 -0.607863 -0.166504 -1.1651666 1.917e-01  
## 193 0.390548 -0.6395942 -1.168507 -0.914134 -1.5499005 4.269e-01  
## 194 0.478370 -0.6962929 -1.057304 -0.563676 -1.3053663 1.370e-01  
## 195 0.434459 -0.5444833 -0.794161 -0.225474 0.2405358 2.295e-01  
## 196 0.214904 -0.6334859 -1.153384 -0.457309 -0.4387227 -4.981e-01  
## 197 0.375911 -1.0240774 -0.390982 0.188841 -0.8870297 4.087e-01  
## 198 0.332000 -0.6095151 -0.826259 -0.401575 -0.7535002 -3.972e-01  
## 199 -0.180294 -0.8534512 -0.946558 -0.357187 -1.1786232 -4.052e-01  
## 200 -0.136383 -0.7394712 -0.769388 0.008019 -0.7717107 -2.633e-01  
## 201 0.083171 -0.9737361 -0.675115 -0.174374 -0.3675193 7.924e-01  
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## 203 0.493007 -0.8563327 -0.774726 -0.530338 -1.4021620 6.002e-01  
## 204 0.449096 -0.5889954 -0.964476 -0.206870 -0.7724430 -7.008e-01  
## 205 0.493007 -0.7768570 -1.010626 -0.752493 -1.9637582 1.732e-01  
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## 207 0.449096 -0.6608596 -1.143705 -0.503827 -0.6486867 2.068e-01  
## 208 0.536918 -0.8822520 -1.197571 -0.429239 -0.9352241 -1.558e+00  
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## 210 0.024624 -0.8082660 -0.994272 -0.457682 -0.8499161 -4.509e-01  
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## 222 0.946753 -0.2828071 0.227358 0.533875 0.3320117 -5.372e-01  
## 223 0.946753 -0.2800175 0.435517 0.675528 0.5623405 -9.306e-01  
## 224 0.932116 -0.5998227 0.627130 1.247395 0.8080864 -5.262e-01  
## 225 0.917479 -0.4023218 0.386490 0.756371 0.4403713 -3.766e-01  
## 226 0.844295 -0.1264329 0.208297 -0.664984 -0.5828911 -1.390e+00  
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## 229 0.829658 -0.7242488 0.929426 0.919063 0.2369814 -1.967e+00  
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## 236 1.034575 -1.0334784 0.668501 1.130069 0.5194109 -1.370e+00  
## 237 1.063849 -1.0101976 0.924412 1.616724 1.0541310 -1.695e+00  
## 238 1.049212 -0.9298897 0.653804 1.131940 -0.1097250 -1.478e+00  
## 239 1.093123 -1.1971456 1.128497 1.723888 0.4784592 -1.305e+00  
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## 251 1.283404 -1.1950422 0.744380 1.592748 0.3708376 -1.414e+00  
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## 253 1.283404 -1.3113337 0.793064 1.503404 0.4392358 -9.033e-02  
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## 255 1.298041 -1.3096740 0.956953 1.833811 0.5523713 -1.270e+00  
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## 258 -2.097739 1.3300284 0.805090 2.041021 -0.4054261 1.538e-02  
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## 288 -0.809684 2.0846069 1.138333 2.766267 -2.2431048 6.041e-01  
## 289 -0.531582 2.1031177 1.414092 3.160324 -3.2672730 3.055e-01  
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## 297 -0.648678 1.8970818 0.530613 2.164429 -1.2065652 2.496e-01  
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## 310 -0.326664 1.8466005 0.636819 1.453621 -1.1220645 4.213e-01  
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## 312 -0.253479 1.3732603 0.076311 1.527544 -1.1382439 7.860e-01  
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## 329 -0.546219 0.9456025 1.315030 -0.218934 -1.5041011 1.805e-01  
## 330 -1.336616 1.2729638 1.438200 0.482115 -0.1302444 8.131e-01  
## 331 -0.370575 1.5734918 0.742987 1.446581 -1.1916958 1.689e-01  
## 332 -0.502308 1.6005776 2.119038 -1.899218 1.1034537 -9.591e-01  
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## 374 0.024624 1.3861033 0.317163 -0.835950 1.2087749 5.721e-01  
## 375 -0.004650 1.3419279 0.307014 -0.517379 0.6552593 4.233e-01  
## 376 0.024624 1.4114418 0.363175 -0.175428 0.4066627 4.278e-01  
## 377 0.039260 1.4570958 0.577987 -0.265586 0.3642990 7.548e-01  
## 378 0.053897 1.3157483 0.012609 -0.583996 0.8019631 1.472e-01  
## 379 -0.107109 0.8294958 0.160919 -1.123302 0.0424204 -3.041e-01  
## 380 -0.107109 0.9462193 0.280099 -1.067844 0.0812535 -2.998e-01  
## 381 -0.107109 0.6966775 -0.519147 -0.632471 0.2427163 -4.559e-01  
## 382 -0.107109 0.7617990 -0.209279 -0.643996 0.0724460 -4.724e-01  
## 383 -0.107109 0.6692751 -0.298164 -0.688968 0.0941881 -6.421e-01  
## 384 -0.092472 1.0986187 -0.002637 -0.837841 1.3167393 -2.941e-01  
## 385 -0.077835 0.9831911 -0.202493 -0.582761 0.4548954 1.717e-01  
## 386 -0.077835 1.1390101 0.206504 -0.803693 1.8385388 -3.551e-01  
## 387 -0.077835 1.0728009 0.325463 -1.114999 0.5580493 -1.403e-02  
## 388 -0.077835 1.1095765 0.364641 -1.357047 1.4470818 -6.045e-02  
## 389 0.039260 1.3613543 0.519966 -0.196948 0.1629762 5.255e-01  
## 390 0.068534 1.2437987 0.516682 -0.995011 0.3203869 -8.423e-02  
## 391 0.068534 1.2432217 -0.218991 -0.182132 0.8042584 6.003e-01  
## 392 0.083171 1.6080554 0.552704 -0.562913 0.7634742 -1.242e-01  
## 393 0.068534 0.7933524 -0.391448 0.111086 1.1404741 3.694e-01  
## 394 0.068534 1.1899261 0.081144 -0.361177 0.3024289 1.170e-01  
## 395 -0.926780 0.7100210 1.545219 -2.173395 2.5062439 -1.253e+00  
## 396 -0.941417 0.9508096 1.900268 -2.618888 2.0127036 -2.322e+00  
## 397 -0.721863 0.7888740 1.490122 -2.572893 1.8854527 -2.295e+00  
## 398 -0.590130 1.1167750 1.848261 -2.579494 1.4351169 -1.248e+00  
## 399 -0.575493 1.4577047 2.191052 -2.441768 1.3907216 -1.518e+00  
## 400 -0.575493 1.9050346 2.723644 -1.387950 0.1507290 -8.169e-01  
## 401 -0.575493 1.7524725 2.890984 -1.587026 0.5229998 -1.062e+00  
## 402 -0.575493 1.5832085 2.663381 -1.549719 0.2709388 -1.036e+00  
## 403 -0.604767 1.5315847 2.393402 -1.553246 1.5538147 -3.858e-01  
## 404 -0.560856 1.5480601 3.237130 -2.796834 0.7819013 -1.138e+00  
## 405 -0.531582 2.0059020 3.202631 -2.052269 0.1561381 -9.261e-01  
## 406 -0.560856 1.8036761 3.025780 -2.210857 0.8830280 -1.426e+00  
## 407 -0.575493 1.4199103 2.716270 -2.114696 0.6647504 -1.292e+00  
## 408 -0.516945 1.3225815 2.435491 -2.994318 1.4748362 -1.202e+00  
## 409 -0.487671 1.3276170 2.230545 -0.970723 0.8616373 -2.301e-01  
## 410 -0.721863 0.5802289 1.250407 -1.828651 2.9620549 -1.772e+00  
## 411 -0.487671 0.9910052 2.078700 -2.400600 2.3908102 -1.161e+00  
## 412 -0.341301 0.9215896 1.000002 -1.683768 1.6613247 -8.749e-01  
## 413 0.185630 1.4335202 1.753613 -2.436770 1.2129198 -6.403e-01  
## 414 0.346637 1.7878764 2.314124 -2.716643 1.5039669 4.232e-02  
## 415 -0.575493 1.4385735 2.064213 -0.751120 0.3031094 -4.249e-01  
## 416 -0.033924 0.9860448 0.997482 -1.363887 0.8948871 -6.271e-01  
## 417 0.039260 1.2255565 1.652189 -3.014088 0.9495900 -5.824e-01  
## 418 -0.165657 0.8241482 0.550436 -0.565713 2.0880579 -7.039e-01  
## 419 0.024624 0.5164713 0.504189 -0.736454 0.8812465 8.982e-02  
## 420 0.727199 1.3268185 -0.112148 -1.429252 1.1365101 -3.008e-01  
## 421 0.858931 1.4613003 0.625552 -0.883527 1.4608584 6.446e-01  
## 422 -0.209568 1.0642888 1.059103 -0.192693 -0.5428906 3.231e-01  
## 423 0.244178 1.5070922 0.992775 -1.440953 1.0629374 5.606e-01  
## 424 0.961390 0.9820759 0.039593 -1.461716 0.0228589 -8.393e-01  
## 425 0.258815 1.3700335 1.200757 -1.129138 0.1042878 -1.696e-03  
## 426 -1.160972 -0.0708461 -0.965845 0.317835 0.2294541 -8.503e-01  
## 427 -0.985328 0.4728502 -0.879090 1.079612 0.6694960 -3.765e-01  
## 428 1.005301 0.8385035 0.360668 -1.473449 -0.7888164 9.166e-01  
## 429 -0.912143 0.5888437 -1.106685 1.045234 0.4942766 -1.437e-01  
## 430 0.405185 2.0142301 1.419822 0.975190 -1.2498732 7.393e-01  
## 431 0.522281 1.3312614 0.411465 -0.972148 1.2437273 1.914e-02  
## 432 0.639377 1.4538995 0.443824 -0.439852 1.0061204 3.494e-01  
## 433 0.566192 1.4687388 -0.087902 -0.515605 1.3957831 7.739e-01  
## 435 0.610103 1.4022107 0.563538 -1.341640 1.0509661 8.750e-01  
## 436 -0.838958 -0.0879851 -1.124665 0.633901 0.3222015 -1.043e+00  
## 437 0.551555 0.8353334 -1.402701 0.616119 0.6128566 4.928e-01  
## 438 -0.297390 0.6620335 -1.257723 0.985431 0.6108302 -6.712e-02  
## 439 -1.292705 0.5405576 -1.381464 0.987272 0.9706621 -5.518e-01  
## 440 0.639377 1.1968018 0.326275 -0.519885 0.6763581 -2.352e-01  
## 441 0.507644 1.1453570 -1.214041 0.952398 0.3192686 5.963e-01  
## 442 0.668651 1.1182988 0.352125 -0.761761 0.9729432 2.802e-01  
## 443 -0.136383 0.4614364 -0.776593 0.718003 -0.0436396 2.033e-01  
## 444 -0.809684 0.1509080 -1.088924 0.863278 0.5021633 -4.321e-01  
## 445 -0.282753 0.8131502 -0.780996 0.774209 0.2220263 2.589e-01  
## 446 0.522281 1.2059585 -1.113158 0.915244 0.6432927 1.504e-01  
## 447 -0.355938 1.3036820 -1.454129 1.411270 0.7824757 2.677e-01  
## 448 -0.282753 -0.1762455 -0.655531 0.576205 1.4362542 4.911e-01  
## 449 -0.560856 0.4652956 -1.168943 0.466529 0.2544598 2.446e-01  
## 450 -0.268116 0.0721323 -0.741431 0.486490 0.6705635 6.724e-01  
## 451 -0.238842 0.2929796 -0.498034 0.443088 0.5950950 -2.341e-01  
## 452 -0.194931 0.3063067 -0.701909 0.652908 1.8780478 1.136e+00  
## 453 -0.209568 0.3168218 -0.838035 0.306341 0.5315699 -6.282e-03  
## 454 -0.531582 0.2202040 -1.037029 0.605648 0.0654420 1.198e-01  
## 455 0.727199 1.5985733 0.737101 -0.885173 0.4786134 8.238e-01  
## 456 0.332000 0.5992854 -1.349724 0.800934 0.0263453 1.788e-01  
## 457 -0.473034 0.8090462 -1.169008 1.127402 0.2442251 2.887e-01  
## 458 -0.575493 0.1270423 -1.060626 0.415763 -0.1137441 -1.367e-01  
## 459 -1.014602 0.4355069 -1.075412 0.786032 0.2927931 -4.675e-01  
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## 461 -0.751137 0.4519410 -1.006785 0.667017 -0.1899593 -1.691e-01  
## 462 -0.721863 0.2281852 -1.022142 0.707942 0.0787160 -3.866e-01  
## 463 -0.721863 0.5384909 -1.210771 0.985300 0.6231119 -3.885e-01  
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## 471 -0.224205 0.5307952 -1.168801 0.726473 0.8683791 3.750e-01  
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## 475 -0.619404 0.7072440 -1.312822 1.094296 1.0874503 3.367e-01  
## 476 -0.560856 0.5111383 -1.105883 0.779700 0.7629100 -1.623e-01  
## 477 -0.590130 0.4038076 -1.137123 0.844256 0.3383546 -2.605e-01  
## 478 -0.224205 1.0374456 -1.057760 1.484180 0.1089945 -2.272e+00  
## 479 -0.253479 -0.1080185 -1.085007 0.562726 0.7354327 -8.568e-01  
## 480 -0.458397 0.3724539 -0.608197 0.629185 0.7232045 1.007e+00  
## 481 0.961390 1.1724869 0.163822 -1.902228 1.3264543 9.639e-01  
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## 490 -0.092472 0.5659087 -1.100246 0.856275 0.7280010 2.312e-01  
## 491 -0.077835 0.8012421 -1.248480 0.807341 0.6441325 4.789e-01  
## 492 -0.268116 0.7448487 -0.855446 0.947843 0.1455848 2.672e-02  
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## 494 0.141719 0.6086986 -1.436042 0.743238 0.7244625 2.394e-01  
## 495 0.727199 1.6651558 -0.159075 0.009129 0.6887483 1.242e+00  
## 496 1.019938 1.3631671 0.702599 -1.769971 1.1987447 1.024e+00  
## 497 -0.033924 0.4662897 -1.199741 0.778487 -0.1909438 1.574e-02  
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## 508 0.727199 0.9445775 -0.778687 0.581811 0.1130850 7.141e-01  
## 509 0.039260 0.2680615 -1.222444 0.329111 0.4024453 2.585e-01  
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## 593 -0.809684 0.5534170 -0.533365 0.246921 0.3221180 -4.683e-01  
## 594 -0.121746 0.2851804 -0.180898 0.265873 -0.3083217 -1.586e-01  
## 595 -0.092472 0.6254074 0.392238 0.151004 -0.9571457 -1.525e-01  
## 596 -0.092472 0.4180472 0.077192 -0.688085 -0.4425035 -4.442e-01  
## 597 -0.736500 0.3617596 0.025216 -0.537095 0.1524771 -5.510e-01  
## 598 -0.121746 0.6708851 0.016064 -0.810365 -0.3840024 -5.670e-03  
## 599 -0.107109 0.4250646 0.129464 0.116263 -0.4038123 -1.045e+00  
## 600 -0.033924 0.7238804 -0.347918 -0.369351 -0.2585894 -1.802e-01  
## 601 -0.165657 0.9179006 -0.672872 -0.059078 0.0752417 7.437e-01  
## 602 -1.102424 0.5248835 0.350954 0.407708 -0.8052512 -1.779e-01  
## 603 -0.385212 0.5945716 -0.232327 0.483999 -0.9989052 4.572e-01  
## 604 -0.282753 0.2109809 -0.197979 -0.398252 -0.4464047 7.989e-02  
## 605 -0.297390 0.3220241 -0.072642 -0.368114 -0.4215533 1.385e-01  
## 606 -0.341301 0.2159573 -0.168418 -0.412104 -0.5648393 -1.224e-01  
## 607 -0.385212 0.1149067 0.047692 -0.236978 -0.5131195 -6.488e-02  
## 608 -0.268116 0.2604383 0.153649 -0.464285 -0.6048483 -1.066e-01  
## 609 -0.151020 0.4706815 -0.214131 -0.924631 -0.3170442 6.277e-03  
## 610 -0.648678 0.0728006 -0.091839 -0.325754 -0.4719955 5.398e-01  
## 611 -0.575493 0.3441441 -0.338205 -0.459684 0.0093675 -4.697e-02  
## 612 -0.677952 0.0736196 0.130057 -0.600686 -1.1330274 1.948e-01  
## 613 -0.575493 -0.0382067 -0.504178 -0.183639 -0.4923457 -6.832e-01  
## 614 -0.575493 0.0127426 0.006870 0.734430 -0.5210675 -2.630e-01  
## 615 -0.677952 0.3646372 -0.463940 -0.651643 -0.2408819 -5.742e-01  
## 616 -0.238842 0.5456845 -0.525896 -0.439570 -0.0557881 -4.477e-01  
## 617 -0.546219 -0.0680374 0.080241 -0.219444 -0.7183063 -4.673e-01  
## 618 -0.312027 0.5095511 0.421512 -1.917861 0.2913835 -4.784e-01  
## 619 -0.575493 0.1057252 1.334727 -0.737774 -0.4941270 -5.563e-01  
## 620 0.127082 0.8932217 -0.433371 -0.321789 0.6939663 7.332e-01  
## 621 0.053897 0.5287502 0.124509 -1.132108 1.2153695 1.882e-01  
## 622 0.068534 0.5524471 0.570689 -1.618784 0.5350006 -1.006e-01  
## 623 0.068534 0.2342029 -0.209474 -1.193806 -0.0599366 -3.827e-01  
## 624 0.068534 0.2839466 -0.013746 -1.174957 0.0599006 -5.030e-01  
## 625 0.068534 0.7799553 0.228405 -1.335072 0.4474111 -4.245e-01  
## 626 0.068534 0.3467975 0.305347 -1.191025 0.1044286 -4.264e-01  
## 627 0.127082 0.9769606 -0.511920 -0.194060 -0.0333513 1.205e+00  
## 628 0.127082 0.9876465 -0.390837 -0.268442 0.0763982 2.548e-01  
## 629 0.083171 0.5256417 -0.384707 -0.439532 -0.1319395 6.776e-02  
## 630 0.083171 0.6721481 -0.693775 -0.372412 -0.3053537 -1.645e-01  
## 631 0.083171 0.6674650 -0.482059 -0.676114 -0.3228851 -6.461e-02  
## 632 0.097808 0.6154643 -0.018092 -0.760503 0.3525922 1.166e+00  
## 633 0.112445 0.4407216 -0.164468 -1.528699 0.2024100 4.413e-01  
## 634 0.112445 0.5191740 -0.310322 -0.697378 -0.1481849 2.009e-01  
## 635 0.053897 0.4496337 -0.521800 -0.607904 -0.3419845 7.357e-01  
## 636 0.068534 0.8689710 -0.585824 -0.413415 0.5604051 8.153e-01  
## 637 0.009987 0.8834135 -0.312401 0.062291 -0.7897221 6.399e-01  
## 638 0.053897 0.7088227 -0.502675 -0.351243 -0.4406804 7.685e-01  
## 639 0.097808 0.6375848 -0.805158 -0.246854 -0.4296297 1.224e-01  
## 640 0.097808 0.4768544 -0.442842 -0.916683 -0.1466841 1.168e-01  
## 641 0.053897 0.4808651 -0.484937 -0.705579 -0.3325024 -1.791e-01  
## 642 0.097808 0.3900265 -0.638125 -0.762536 -0.2636140 8.395e-01  
## 643 0.068534 0.6754688 -0.491930 -0.562350 -0.2557430 8.124e-01  
## 644 0.053897 0.4540997 -0.582734 -0.833455 0.0714977 6.335e-01  
## 645 0.097808 0.3788702 -0.195602 -1.176541 -0.0515326 2.124e-01  
## 646 0.097808 0.2883666 -0.382607 -1.064273 0.1950658 1.025e+00  
## 647 0.097808 0.2518118 -0.447210 -0.585203 0.0669827 5.027e-01  
## 648 0.083171 0.6910757 -0.600696 -0.531880 0.3007105 8.056e-01  
## 649 -0.033924 0.2780343 -0.404239 -0.965386 -0.4205795 6.858e-01  
## 650 0.097808 0.3597150 -0.205350 -1.235847 0.7158773 3.892e-01  
## 651 0.097808 0.1922812 -0.760276 -0.650811 -0.1782196 8.224e-01  
## 652 0.097808 0.5332004 -0.554986 -0.579517 -0.3505039 3.624e-01  
## 653 -0.092472 0.4876775 0.311248 -1.527125 -0.2088327 -3.950e-01  
## 654 0.083171 0.3703068 -0.539915 -0.799013 -0.0052157 8.202e-01  
## 655 0.083171 0.3308998 -0.541365 -1.242972 -0.7293566 4.501e-01  
## 656 0.083171 0.2292657 -0.396972 -0.825697 -0.5224801 6.739e-01  
## 657 -0.077835 -0.1159099 -0.474338 -0.862391 -0.9831494 2.416e-01  
## 658 -0.180294 0.2616833 -0.378277 -0.901412 -0.2148889 2.935e-01  
## 659 1.312678 -0.2511820 0.054166 -1.280421 -0.3838593 5.691e-01  
## 660 -1.058513 -0.5626302 -0.907651 -0.072555 -0.1954267 -4.381e-01  
## 661 -1.087787 -1.2069242 -0.314903 -0.688100 -1.1649701 -9.255e-01  
## 662 -1.058513 -1.3142341 -0.221976 -0.659389 -1.6553912 -9.215e-01  
## 663 -1.043876 -1.0251291 -0.661320 -0.406206 -1.0464046 -1.258e+00  
## 664 -0.707226 -0.6504100 -1.336565 -0.798005 -1.0678098 -7.039e-01  
## 665 -1.014602 -1.2779595 -0.450920 -0.629741 -1.3531212 -1.301e+00  
## 666 -0.999965 -1.0509340 -0.120758 0.502782 0.8401195 -6.086e-01  
## 667 -0.751137 -1.0892618 -0.639578 -0.324480 -0.9655594 -8.169e-01  
## 668 -0.941417 -0.9577339 -0.552668 -0.633885 -1.1216269 -1.050e+00  
## 669 -0.941417 -0.9163704 -0.534396 -0.709787 -1.3335670 -7.576e-01  
## 670 -0.312027 -0.6104044 -1.047397 -0.081897 0.1842086 -1.184e+00  
## 671 -0.151020 -0.1616639 -1.002971 0.298055 0.1850252 -2.228e-01  
## 672 -0.648678 -0.4465380 -1.075577 0.024503 -0.4503876 -3.984e-01  
## 673 -0.721863 -0.4290449 -0.905693 -0.025058 -0.1372957 -6.685e-01  
## 674 -0.414486 -0.1743225 -1.126891 0.522985 0.2475068 -2.682e-01  
## 675 -0.516945 -0.5910921 -0.905906 0.399277 1.2013807 -8.515e-01  
## 676 -0.780411 -0.9630247 -0.797985 -0.512813 -1.1141060 -1.228e+00  
## 677 -0.136383 0.1878231 -1.501120 0.045260 0.4458436 -1.034e-01  
## 678 0.844295 0.3756306 -1.419131 -0.347610 0.8721434 3.806e-01  
## 679 -0.707226 -0.3561541 -1.106316 -0.156542 -0.6123922 -4.344e-01  
## 680 -0.721863 -0.9250234 -0.861800 -0.602893 -1.1815836 -5.363e-01  
## 681 -0.619404 -0.8366362 -0.703922 -0.893904 -1.9112280 2.483e-01  
## 682 0.551555 0.4317577 -1.628741 -0.153952 0.0203523 2.088e-01  
## 683 0.522281 0.4354474 -1.637023 -0.020021 0.0209481 -2.217e-02  
## 684 0.419822 -0.1229361 -0.948386 0.032537 1.4774443 1.360e+00  
## 685 0.683288 0.1540735 -1.699212 -0.386331 -0.0194880 -2.861e-01  
## 686 0.112445 -0.3742922 -0.833781 -0.521437 -0.6904045 3.409e-01  
## 687 -0.253479 -0.2877490 -1.164287 -0.125075 -0.5973119 1.109e-02  
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## 689 -0.634041 -0.9479060 -0.844309 -0.141250 0.6913468 3.174e-01  
## 690 -0.546219 -0.6849457 -0.526873 0.252724 -0.4554691 -8.934e-02  
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## 692 0.727199 -0.1517737 -1.224309 -0.360487 -0.5376321 -3.017e-01  
## 694 -0.604767 -0.8615074 -0.751635 -0.509295 -1.0204141 -4.985e-01  
## 695 0.493007 0.2874223 -1.324271 0.398766 0.8867375 7.603e-01  
## 696 0.507644 -0.0668063 -1.513311 -0.156168 0.4975383 4.854e-01  
## 697 -0.414486 -0.3679383 -0.996944 -0.187338 -0.1454658 -6.448e-01  
## 698 0.449096 0.0212998 -1.278779 -0.451742 -0.6520538 4.963e-01  
## 699 -0.194931 -0.8085922 -0.921096 -0.051479 -0.1487248 1.087e+00  
## 700 0.610103 -0.3474334 -0.992832 -0.249394 -0.0233022 6.959e-01  
## 701 -0.151020 -0.3816676 -0.761934 0.070118 -0.3822298 -4.505e-01  
## 702 0.522281 0.4012365 -1.405272 0.299929 -0.5886775 3.264e-01  
## 703 0.522281 0.3400370 -1.283294 0.196115 -0.7826215 3.687e-01  
## 704 -0.004650 -0.5252454 -0.916311 -0.546643 -0.8057243 -1.400e-01  
## 705 0.580829 0.3297749 -1.316728 0.123927 0.2730520 -5.197e-01  
## 706 0.346637 -0.3515684 -0.815663 0.362919 -0.5633251 -8.557e-01  
## 707 0.712562 -0.3071787 -0.836251 0.285123 0.1459723 4.782e-01  
## 708 0.507644 0.1778474 -1.719311 0.027524 2.2150647 2.403e+00  
## 709 0.566192 0.2928593 -1.377737 0.330626 0.0575207 5.634e-01  
## 710 0.595466 -0.1922812 -0.748869 -0.138869 0.6580545 1.328e+00  
## 711 0.493007 -0.2366598 -1.123860 -0.353960 -0.3818745 6.186e-03  
## 712 0.244178 -0.6383879 -0.761313 -0.243279 -1.0013040 1.451e-01  
## 713 0.522281 -0.6228689 -0.818960 -0.173956 -0.5891213 4.431e-01  
## 714 0.185630 -0.5646511 -1.252920 -0.483606 -0.7600440 1.935e-01  
## 715 0.536918 -0.5444829 -1.319206 -0.848112 -1.5073234 7.758e-01  
## 716 0.507644 -0.1999690 -0.956219 -0.337764 -0.4406850 2.027e-01  
## 717 0.624740 0.1636147 -1.583829 -0.163666 0.5787866 1.182e+00  
## 718 0.551555 -0.4801359 -1.332433 -0.846961 -1.2888575 6.005e-01  
## 719 0.536918 -0.6722262 -0.897171 -0.716961 -1.2041903 1.152e+00  
## 720 0.566192 -0.8285825 -0.812058 -0.161118 -0.7743215 1.072e-01  
## 721 0.478370 -0.4852336 -1.315377 -0.723009 -1.1173842 -1.221e-01  
## 722 0.478370 -0.6866507 -1.102975 -0.308748 0.2341538 9.407e-01  
## 723 0.522281 -0.3018352 -1.278009 -0.664695 -0.5463080 -6.297e-01  
## 724 0.463733 -0.4727767 -1.013498 -0.889902 -0.8789194 -4.826e-01  
## 725 0.566192 -0.7829811 -0.686593 -0.757818 -1.7707378 2.681e-01  
## 726 0.536918 -0.7527325 -0.715331 -0.546042 -0.8120332 7.248e-01  
## 727 0.507644 -0.5670706 -0.887502 -0.605897 -1.0551080 5.391e-01  
## 728 0.332000 -0.6915515 -0.874083 -0.432666 -0.4353743 -8.433e-02  
## 729 0.463733 -0.6793883 -1.186966 -0.843518 -1.5263121 5.318e-02  
## 730 0.463733 -0.7234679 -1.171894 -0.606858 -1.1029906 -1.201e+00  
## 731 0.580829 -1.1065316 -0.237243 0.021854 -0.9107872 -1.348e+00  
## 732 0.580829 -0.7616906 -0.473901 -0.150646 -0.5872238 -1.216e+00  
## 733 0.478370 -0.8612192 -0.757373 -0.351600 -0.8040733 -7.418e-01  
## 734 0.405185 -0.8293179 -0.676438 -0.124387 -0.6807860 -8.282e-01  
## 735 0.273452 -0.8718854 -0.712477 -0.260251 -0.7866675 -9.976e-01  
## 736 -1.966006 -0.9783471 -0.922287 0.322758 0.4837573 -5.081e+00  
## 737 -2.170924 -0.6125806 -0.786976 0.919870 0.7173320 -3.109e+00  
## 738 -1.936732 -1.1546442 -0.365432 0.113220 -0.2138173 -1.903e+00  
## 739 -2.024554 -0.5548054 -0.794851 0.441073 0.2305220 -1.337e+00  
## 740 -1.804999 -0.8481129 -0.628038 0.324405 0.8352393 -1.538e+00  
## 741 -2.097739 -0.7354717 -0.708993 0.351017 1.1721964 -1.171e+00  
## 742 -1.819636 -0.5123533 -0.837212 0.635261 0.5806407 -1.295e+00  
## 743 -1.673266 -0.4696696 -1.228143 0.226189 0.6620429 -3.881e+00  
## 744 -1.658629 -0.4812625 -0.680530 0.705764 1.1982910 -1.685e+00  
## 745 -1.556171 -0.2247304 -1.005830 0.328512 0.7879503 -2.205e+00  
## 746 -1.731814 -1.2902228 -0.348811 0.411872 0.4230270 -1.765e+00  
## 747 -1.526897 -0.0214525 -1.091641 0.692393 0.8460120 -1.498e+00  
## 748 -1.673266 -1.1780494 -0.482703 -0.058925 -0.3288134 -1.259e+00  
## 749 -1.702540 -0.4962374 -0.630914 0.249501 -0.0104443 -1.043e+00  
## 750 -1.819636 -1.4979201 -0.120731 0.228990 -0.1107034 -2.143e+00  
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## 752 -1.526897 -1.1552832 -0.701922 0.252633 0.0499505 -3.349e+00  
## 753 -1.629355 -1.3737083 -0.731248 0.624274 0.7862464 -4.589e+00  
## 754 -1.834273 -1.4811497 -0.160576 0.463650 0.5494427 -2.167e+00  
## 755 -1.600082 -1.2123035 -0.597601 -0.350946 -0.8336916 -1.950e+00  
## 756 -1.380527 -1.0363909 -0.814983 -0.128243 -0.0408321 -1.412e+00  
## 757 -1.731814 -0.5313038 -1.045579 0.394341 0.6791223 -1.749e+00  
## 758 -1.819636 -1.2828713 -0.243748 0.306884 0.8484647 -1.336e+00  
## 759 -1.556171 -0.6033306 -0.827870 0.680610 1.0883174 -1.835e+00  
## 760 -1.775725 -1.1158027 -0.440755 0.012575 -0.3721772 -1.839e+00  
## 761 -1.658629 -1.0750391 -0.985937 -0.307875 -0.8638852 -9.201e-01  
## 762 -1.278068 -0.5315368 -1.160889 0.444002 0.1244010 -2.281e+00  
## 763 -1.512260 -0.7048592 -0.958853 0.289324 -0.0003238 -2.723e+00  
## 764 -1.336616 -0.8014812 -0.698619 0.630917 0.6223906 -1.872e+00  
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## 768 0.741836 0.5843085 -0.703301 0.041775 -0.0896600 3.820e-02  
## 769 0.771110 0.9515868 -0.567207 -0.176934 0.8092467 -7.189e-01  
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## 771 0.800384 -0.4162609 -1.062023 0.244971 -0.1178187 1.951e-01  
## 772 0.727199 0.6670035 -1.020204 0.098923 0.4169952 4.988e-01  
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## 774 0.815021 -0.1485795 -1.067130 -0.278707 -0.2747706 -2.674e-01  
## 775 0.712562 0.7435421 -1.187681 0.138022 0.1946948 9.334e-01  
## 776 0.756473 0.8621994 -1.112846 -0.053177 0.4771439 6.017e-01  
## 777 0.712562 0.6319845 -1.123757 0.052176 0.3018527 -3.047e-01  
## 778 0.741836 0.6644070 -1.170346 0.063223 0.0332169 5.148e-01  
## 779 0.741836 0.8217370 -1.191904 0.246479 0.4996149 2.885e-01  
## 780 0.785747 0.6716254 -0.943101 0.063158 0.8259192 1.488e+00  
## 781 0.654014 0.4003905 -1.000886 -0.001907 0.9266407 6.206e-01  
## 782 0.639377 0.4486687 -1.208238 -0.278515 0.0964412 1.727e-01  
## 783 0.639377 0.4065151 -1.041565 -0.422971 0.7642991 2.445e-01  
## 784 0.624740 0.3559451 -1.311815 -0.417654 0.0487959 6.877e-01  
## 785 0.624740 0.4885739 -1.364432 -0.010491 -0.0679962 4.331e-01  
## 786 0.624740 0.6169358 -0.971781 -0.411265 0.5897106 -3.320e-02  
## 787 0.610103 0.7131550 -1.497325 -0.211498 1.7537035 8.015e-01  
## 788 0.610103 0.2770125 -1.489011 -0.335577 -0.0720169 4.270e-01  
## 789 0.771110 -0.1805091 -0.174835 0.187043 0.0654321 -1.340e+00  
## 790 0.756473 -0.1264518 -0.175516 0.228604 0.7957756 -1.809e-02  
## 791 0.727199 0.0814535 -0.595766 -0.074476 0.4186378 9.247e-02  
## 792 0.639377 0.4107055 -1.908931 -0.416213 0.3282471 9.011e-01  
## 793 0.595466 -0.0162484 -1.135164 -0.032884 0.1310800 -1.542e-01  
## 794 0.785747 -0.0514597 -0.398459 -0.107322 0.5475400 3.248e-01  
## 795 0.697925 -0.0554463 -0.543681 0.106103 0.1203443 -4.877e-02  
## 796 0.683288 -0.1166683 0.008432 -0.040088 0.1740052 -2.873e-01  
## 797 0.668651 0.1835770 -0.563181 -0.268795 0.0290600 -2.221e-01  
## 798 0.683288 -0.0682157 -0.332000 0.100942 0.4318843 -2.141e-01  
## 799 0.683288 -0.2816638 -0.105622 0.254584 0.1113821 -7.140e-01  
## 800 0.668651 -0.2659154 -0.031397 0.731275 0.7206333 -4.716e-01  
## 801 0.668651 0.0006088 -0.383182 -0.111887 -0.3010558 -6.773e-02  
## 802 0.668651 0.1166546 -0.299889 0.224335 -0.0292150 -4.845e-01  
## 803 0.610103 -0.0577755 -0.878098 -0.389863 0.1814405 -3.456e-01  
## 804 0.697925 -0.1343729 -0.395564 -0.323618 0.1193538 -3.236e-01  
## 805 0.771110 -0.2793635 -0.280965 0.137512 0.0860872 -1.902e-01  
## 806 0.771110 -0.5578539 -0.148783 0.391994 0.0554725 -5.906e-01  
## 807 0.566192 0.1027575 -1.037662 -0.416442 -0.0480842 -1.823e-01  
## 808 0.595466 0.5518430 -1.262006 -0.135488 0.0283367 6.679e-01  
## 809 0.624740 -0.0355314 -1.083721 0.422574 -0.3116517 5.289e-01  
## 810 0.595466 0.0129219 -1.151116 -0.377525 0.0974658 9.118e-02  
## 811 0.595466 0.0317134 -1.059758 -0.554679 -0.6281169 -6.135e-02  
## 812 0.610103 0.2311380 -0.963475 -0.141442 -0.5938868 3.616e-01  
## 813 0.580829 -0.1231616 -0.788508 -0.274531 -0.0239852 1.190e-01  
## 814 0.551555 0.1834608 -0.979105 -0.693683 -0.2703618 5.458e-01  
## 815 0.580829 0.2962790 -1.316794 -0.731577 -0.2652289 6.512e-01  
## 816 0.580829 -0.2214297 -1.036017 -0.496285 -0.8055072 1.554e-01  
## 817 0.654014 0.0225896 -0.779912 -0.377519 -0.1085054 8.933e-03  
## 818 0.580829 -0.0322000 -1.187702 -0.356409 0.3040192 2.966e-01  
## 819 0.551555 0.0325533 -0.832370 -0.394807 -0.0468104 1.735e-01  
## 820 0.697925 -0.0957519 -0.671743 -0.444939 -0.0776280 -1.443e-01  
## 821 0.551555 0.3887248 -0.769984 -0.953682 -0.3740927 5.836e-01  
## 822 0.580829 -0.0657406 -0.838390 -1.038145 -0.6006571 5.333e-01  
## 823 0.536918 -0.1725100 -0.998053 -1.072924 -0.8351712 6.629e-01  
## 824 0.566192 -0.1831920 -0.696313 -0.271700 -0.5620549 1.705e-01  
## 825 0.536918 -0.3130838 -0.702046 -0.419288 -0.0924022 -3.961e-02  
## 826 0.756473 -0.3868395 -0.650185 0.136667 0.2003015 2.843e-02  
## 827 0.668651 0.0696700 -0.954229 -0.794789 -0.6360917 4.114e-01  
## 828 0.654014 0.0314150 -0.798684 -0.644911 0.1360974 1.113e-01  
## 829 0.668651 -0.2461451 -0.263657 -1.125038 -0.2952994 -4.458e-01  
## 830 0.639377 0.2442481 -1.086996 -0.518486 -0.0343588 3.480e-01  
## 831 0.654014 -0.1061960 -0.811336 -0.777444 -0.9039757 1.377e-01  
##   
##   
## Biplot scores for constraining variables  
##   
## CCA1 CA1 CA2 CA3 CA4 CA5  
## arctic.env$tjan -1 0 0 0 0 0

Shared variance: 25% July variance: 15% January variance: 5%

July temp + January temp + Annual precipitation + July sunshine:

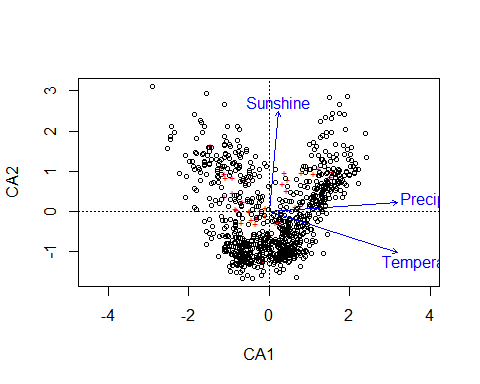
arctic\_pollen\_cca\_combo <- cca(X=arctic\_pollen\_sqrt, y=c(arctic.env$tjul,arctic.env$tjan,arctic.env$annp,arctic.env$sjul))  
summary(arctic\_pollen\_cca\_combo)

##   
## Call:  
## cca(X = arctic\_pollen\_sqrt, y = c(arctic.env$tjul, arctic.env$tjan, arctic.env$annp, arctic.env$sjul))   
##   
## Partitioning of scaled Chi-square:  
## Inertia Proportion  
## Total 1.141 1  
## Unconstrained 1.141 1  
##   
## Eigenvalues, and their contribution to the scaled Chi-square   
##   
## Importance of components:  
## CA1 CA2 CA3 CA4 CA5 CA6  
## Eigenvalue 0.2517 0.1355 0.07269 0.05593 0.04609 0.03751  
## Proportion Explained 0.2206 0.1188 0.06371 0.04902 0.04040 0.03288  
## Cumulative Proportion 0.2206 0.3393 0.40306 0.45207 0.49247 0.52535  
## CA7 CA8 CA9 CA10 CA11 CA12  
## Eigenvalue 0.03394 0.03300 0.02915 0.02834 0.02616 0.02536  
## Proportion Explained 0.02974 0.02892 0.02555 0.02484 0.02293 0.02222  
## Cumulative Proportion 0.55509 0.58402 0.60957 0.63440 0.65733 0.67956  
## CA13 CA14 CA15 CA16 CA17 CA18  
## Eigenvalue 0.02353 0.02265 0.02099 0.02061 0.01913 0.01863  
## Proportion Explained 0.02063 0.01985 0.01840 0.01807 0.01676 0.01633  
## Cumulative Proportion 0.70018 0.72003 0.73843 0.75650 0.77327 0.78959  
## CA19 CA20 CA21 CA22 CA23 CA24  
## Eigenvalue 0.01800 0.01721 0.01638 0.01584 0.01462 0.01373  
## Proportion Explained 0.01578 0.01508 0.01436 0.01388 0.01281 0.01204  
## Cumulative Proportion 0.80537 0.82045 0.83481 0.84870 0.86151 0.87354  
## CA25 CA26 CA27 CA28 CA29 CA30  
## Eigenvalue 0.01331 0.01285 0.01253 0.01194 0.011322 0.010971  
## Proportion Explained 0.01167 0.01126 0.01098 0.01046 0.009923 0.009616  
## Cumulative Proportion 0.88521 0.89647 0.90745 0.91792 0.927841 0.937456  
## CA31 CA32 CA33 CA34 CA35  
## Eigenvalue 0.010536 0.010103 0.009842 0.009294 0.008643  
## Proportion Explained 0.009234 0.008855 0.008626 0.008145 0.007575  
## Cumulative Proportion 0.946690 0.955545 0.964171 0.972317 0.979891  
## CA36 CA37 CA38  
## Eigenvalue 0.008264 0.007549 0.007129  
## Proportion Explained 0.007243 0.006617 0.006248  
## Cumulative Proportion 0.987135 0.993752 1.000000  
##   
## Scaling 2 for species and site scores  
## \* Species are scaled proportional to eigenvalues  
## \* Sites are unscaled: weighted dispersion equal on all dimensions  
##   
##   
## Species scores  
##   
## CA1 CA2 CA3 CA4 CA5 CA6  
## F.PABI 1.57400 0.99793 -0.002725 2.16897 -0.494603 0.23770  
## F.BALN 0.23665 -0.24955 0.188466 -0.16459 -0.008175 0.01689  
## F.CAMB 0.41461 0.52859 -0.678819 -0.03075 -0.090866 0.01535  
## F.APIA -0.55858 -0.81779 -0.320921 0.51672 1.364881 1.32616  
## F.CART -0.09185 0.10564 -0.131030 -0.27099 -0.102978 0.21127  
## F.TULI -0.09901 -0.08925 -0.170108 -0.09426 -0.082244 0.44432  
## F.BBET 0.15997 -0.27873 0.043190 -0.01096 0.055180 -0.06417  
## F.BRAS -0.92582 0.85373 0.783244 -0.06266 -0.101212 0.45182  
## F.CARY -0.91179 0.46222 0.046807 0.17151 -0.071657 -0.12458  
## F.CHEN 0.32325 0.69698 -0.686331 -0.50842 0.235717 0.24360  
## F.BCOR 0.37113 0.95905 -1.258357 -0.43952 0.608652 0.55746  
## F.CUPR 0.27164 -0.33361 -0.270623 -0.13345 1.065505 -0.34047  
## F.CYPE -0.31974 -0.16064 -0.118236 0.03626 -0.148856 0.05682  
## F.RDRY -1.18166 1.11274 0.548593 -0.11020 -0.201578 -0.23189  
## F.ELAE 0.27258 -0.68915 0.567678 -0.68673 0.500273 -0.44734  
## F.ERIC -0.35063 -0.29867 -0.487042 0.15691 -0.222287 -0.28938  
## F.FABA -0.66673 0.24324 -0.243058 -0.09242 -0.602280 -0.29503  
## F.FFAG 1.53287 0.86194 -0.268453 2.41908 0.419175 0.30809  
## F.OFRA 0.80951 0.97949 -1.091808 0.45654 0.242115 0.34003  
## F.PLAR 1.18022 0.56613 -0.256206 0.23957 0.008949 -0.01568  
## F.MMYR 0.78128 0.13787 0.139973 -0.52084 0.449546 -0.32529  
## F.ONAG -0.22559 0.03006 -0.189677 0.01085 -0.439631 -0.17363  
## F.POXR -1.08039 0.84270 0.375310 0.12719 0.231632 -0.13640  
## F.PAPA -1.47463 1.63418 0.784674 -0.04318 0.271347 -0.63317  
## F.PPIC 0.66020 0.12473 0.232899 0.09947 -0.017319 -0.04444  
## F.PPIN 0.44166 0.79491 -0.404220 -0.36565 0.010849 -0.03761  
## F.PPLA -0.61056 0.80027 0.806260 -0.23681 0.568172 0.36514  
## F.POAC -0.44106 -0.19334 -0.060438 0.11873 0.055066 0.22759  
## F.POLE -0.18101 -1.24086 0.362248 0.14317 0.119388 3.73600  
## F.POLY -0.83601 0.06393 -0.389214 0.25122 -0.327976 -0.11499  
## F.SPOP 0.39080 -0.41679 0.459604 -0.31138 0.162840 -0.15869  
## F.FQUE 1.21830 1.07335 -0.994429 0.03202 0.571238 0.64643  
## F.RANU -0.81105 0.05932 0.086689 0.25502 0.530453 0.15346  
## F.ROSA -0.49089 0.01900 0.185172 -0.10349 -0.141892 0.25728  
## F.SSAL -0.49901 0.01228 -0.049242 0.04910 0.110239 -0.22013  
## F.SAXI -1.10631 0.94256 0.517484 -0.08169 -0.149516 -0.01358  
## F.SCRO -1.11882 0.38568 0.228885 0.11737 -0.035997 -0.42163  
## F.RTHA -0.69480 -0.27607 -0.590872 1.08865 2.599358 -0.31906  
## F.ULMA 1.10605 0.94596 -1.255561 -0.29798 0.905836 1.05703  
##   
##   
## Site scores (weighted averages of species scores)  
##   
## CA1 CA2 CA3 CA4 CA5 CA6  
## 1 0.165494 7.126e-01 -0.976421 -1.184770 -0.3707646 0.0199478  
## 2 -0.235258 8.736e-01 -1.419668 0.609068 -1.3270187 0.3377500  
## 3 -0.121352 1.196e+00 -1.320869 -0.567446 -0.8609090 1.2040515  
## 4 0.406856 8.291e-01 -1.608331 0.829726 -1.2334221 -0.0899053  
## 5 -0.026331 6.219e-01 -1.518261 -0.487660 -0.7612807 -0.5802896  
## 6 -0.072478 1.127e+00 -1.898170 -0.753946 -0.5643146 0.2466878  
## 7 -0.158242 3.733e-01 -1.494060 0.139992 -1.3642429 -0.8356484  
## 8 -0.490670 9.681e-01 -0.719585 -0.671486 -0.8259025 -0.4427586  
## 9 -0.188204 2.732e-01 -1.520202 -0.607375 -0.9985404 -0.1389464  
## 10 -0.543562 3.014e-01 -1.016237 -0.179037 -0.6871423 -1.0953884  
## 11 -0.707815 8.946e-01 -1.160045 -0.525208 -0.6228673 0.1654063  
## 12 -0.473423 8.344e-01 -1.542246 -0.611479 -1.2360213 -0.2890211  
## 13 -0.574114 1.484e+00 -1.483368 -1.079232 0.0169768 0.5675612  
## 14 -0.743924 -7.210e-02 -1.417509 0.029320 -0.9272315 -1.6327080  
## 15 -0.248059 2.287e-01 -1.793539 -0.434579 -0.8424834 -0.5138749  
## 16 -0.559757 8.473e-01 -1.502673 -0.320545 -0.8772438 0.4581296  
## 17 -1.103893 1.350e+00 -0.284104 -0.654532 -0.8215274 -1.1111578  
## 18 -0.254647 1.054e+00 -0.814528 0.575707 -0.9357012 0.3168456  
## 19 -0.222909 3.429e-01 -1.267714 -0.586835 -0.4353351 0.2614324  
## 20 -0.979063 9.047e-01 -0.885209 0.102500 -0.6301143 -0.7619458  
## 21 -0.495110 2.577e-01 -1.210924 -0.415450 -0.7954214 -0.3666020  
## 22 -0.634697 7.613e-01 -0.852918 -0.500858 -0.7143500 -0.7799799  
## 23 -1.179730 3.065e-01 -0.321296 0.314712 -0.7187540 -0.5964897  
## 24 -0.837244 -2.763e-01 -1.809429 0.230691 -1.3743442 -1.5976165  
## 25 -1.090337 -2.224e-01 -1.476789 0.648944 -0.8103996 -1.2118751  
## 26 -0.546098 2.560e-01 -1.841677 -0.447721 -1.6128035 -0.6998909  
## 27 -1.192777 -1.241e-01 -1.231531 0.542971 -0.7325586 -1.1699300  
## 28 -0.842241 2.505e-01 -1.421201 -0.197984 -0.0608270 0.3913030  
## 29 -0.713989 7.445e-01 -1.055413 -0.417258 -0.6276861 -0.0321339  
## 30 -0.688786 1.481e-01 -1.599733 -0.157350 -1.5937637 -0.2677564  
## 31 -0.747729 -4.787e-01 -1.203595 0.321852 -0.4733762 -0.2631326  
## 32 -0.961593 3.059e-01 -1.484427 0.173246 -0.7907541 -1.0379538  
## 33 -1.023714 1.278e-01 -1.407782 0.183778 -1.3415655 -1.0147850  
## 34 -0.591263 6.400e-01 -1.366095 -0.586944 -1.3616375 -0.6267682  
## 35 -0.818981 3.967e-01 -1.247487 -0.307368 -1.0148491 -0.4004335  
## 36 -1.230297 1.879e-01 -1.028477 0.304058 -1.0094773 -0.7835838  
## 37 -1.125626 1.126e+00 -1.368968 -0.039033 -0.3840271 1.5159476  
## 38 -0.718295 -5.372e-01 -0.717134 -0.138448 -0.2889362 -0.2743894  
## 39 -0.840955 -3.194e-01 -0.942007 -0.023131 -0.4144419 -1.1209473  
## 40 -1.045161 -5.896e-01 -0.886824 0.531174 -0.9312387 -1.3064931  
## 41 -0.314460 -1.456e-01 -2.366799 -0.526876 -1.4409352 -0.8623967  
## 42 -1.481610 3.187e-01 -0.846374 0.487275 -0.9706777 -1.5011907  
## 43 -1.328821 2.627e-01 -0.920268 0.795102 -0.5613026 -1.3768696  
## 44 -1.118363 4.063e-01 -1.083366 0.448127 -0.4708197 -1.5662671  
## 45 -1.380322 7.336e-01 -0.893430 0.290616 -0.9153264 -1.1141981  
## 46 -1.850048 5.667e-01 0.190781 0.842244 -1.0488511 -1.9437963  
## 47 -1.819894 5.129e-01 0.028776 0.761855 -0.9192008 -1.3443664  
## 48 -1.711023 7.643e-01 -0.481206 0.517050 -0.7939128 -2.2592299  
## 49 -0.410065 7.815e-01 -1.610721 0.648115 -1.1709644 -0.2525049  
## 50 -1.184598 9.161e-01 -1.052275 -0.090102 -0.6966874 -1.5626651  
## 51 -1.622107 1.176e+00 0.194399 -0.255874 -1.4470880 -1.4544387  
## 52 -1.860478 1.051e+00 0.117367 0.477871 -0.8312505 -0.7134821  
## 53 -1.804679 1.440e+00 -0.375193 0.403061 -0.8599534 -1.6316117  
## 54 -1.430834 1.484e-01 -0.364376 0.571431 -1.3181151 -1.7416405  
## 55 -1.610406 1.226e+00 -0.562043 0.208650 -0.6452747 -1.3670629  
## 56 -1.571731 9.184e-01 -0.566291 0.233313 -1.3001182 -1.4129747  
## 57 -1.613479 -2.512e-01 -1.977646 1.110050 -1.8459546 -2.3781214  
## 58 -1.708189 9.786e-01 -1.060914 0.049930 -2.4380253 -1.6665868  
## 59 -1.529166 1.393e+00 -0.183695 -0.167837 -0.9779738 -1.1361040  
## 60 -0.974451 1.606e+00 -1.271837 -0.860797 -1.3560989 -0.4230694  
## 61 -1.287054 1.002e+00 -0.143925 -0.133031 -0.7803151 -0.9771728  
## 62 -1.263968 1.179e+00 -0.142898 -0.369740 -1.5443948 -0.3956209  
## 63 -1.244615 1.243e+00 -0.397427 -0.501914 -1.2242739 -0.2497660  
## 64 -2.096324 1.400e+00 0.596749 0.543090 0.0622284 -2.1139290  
## 65 -1.915237 1.240e+00 0.573148 0.386577 -0.8734808 -1.8946638  
## 66 -1.029009 1.077e+00 -0.473205 -0.630110 -0.8116374 -0.6760601  
## 67 -1.772224 1.083e+00 0.399667 0.095285 -0.7314889 -0.8510072  
## 68 -1.448694 6.894e-01 -0.995869 0.295648 -1.0385038 -1.2309628  
## 69 -1.673641 1.976e+00 0.110185 -0.575633 -0.6519308 -0.4989226  
## 70 -0.734797 1.097e+00 0.054852 -0.464295 -0.5976113 -0.3321385  
## 71 -0.979841 1.658e+00 0.425206 -0.861036 -0.0416808 -0.2153571  
## 72 -1.094916 1.440e+00 -0.135503 -0.549383 -1.2004474 -0.7584086  
## 73 -0.742221 2.037e+00 0.130623 -1.144428 -0.3506119 -0.3306207  
## 74 -1.102325 1.422e+00 -0.183431 -0.071932 0.4379934 -0.7125897  
## 75 -0.699315 1.437e+00 0.801950 -0.491940 -0.8113781 0.2888893  
## 76 -1.105933 1.672e+00 0.786636 0.050998 1.0870132 -0.4875361  
## 77 -0.333733 1.365e+00 -0.142208 -0.676936 -0.1386974 1.0104191  
## 78 -0.828018 1.148e+00 0.851721 -0.402561 -0.3117146 0.7863995  
## 79 -0.571662 1.542e+00 0.491812 -1.128395 0.1307423 -0.2180406  
## 80 -0.785820 2.109e+00 0.904716 -1.349236 -0.4549504 -0.1999131  
## 81 -1.163405 1.110e+00 0.743069 0.338364 1.2458652 0.4934597  
## 82 -1.121411 1.638e+00 0.844625 -0.399451 -0.1636268 -0.1423400  
## 83 -1.022827 1.394e+00 0.685161 -0.183253 -0.5017104 1.1791497  
## 84 -0.756092 1.501e+00 0.386196 -0.570604 0.3891481 0.7241674  
## 85 -1.713210 2.269e+00 1.386841 -0.103193 0.1277539 -0.1016949  
## 86 -0.780464 1.771e+00 1.081299 -0.235551 0.6197724 0.5518820  
## 87 -0.736626 1.385e+00 0.343238 -0.246078 -0.0912073 0.2149310  
## 88 -0.705771 4.616e-01 0.656942 -0.100572 -0.0476830 -0.2891690  
## 89 -0.361989 9.209e-01 -0.044775 -0.385304 0.8707401 0.5013641  
## 90 -0.419419 1.084e+00 0.258314 -1.004544 -0.7560686 0.1092788  
## 91 -1.694681 2.222e+00 0.988552 -0.160132 0.3894273 -0.3129973  
## 92 -1.861477 2.421e+00 2.022355 -0.088301 -0.1735696 0.2570845  
## 93 -0.478117 1.212e+00 0.680883 -0.153257 0.1615181 0.5913086  
## 94 -0.734874 1.144e+00 0.478191 -0.309217 -0.2591862 0.8698795  
## 95 -0.745870 1.620e+00 0.482223 -0.913669 0.3353210 -0.2560960  
## 96 -0.969682 9.699e-01 0.991186 -0.086961 -0.0074988 0.4145421  
## 97 -1.815952 1.803e+00 1.542508 0.446761 0.9881644 0.1376003  
## 98 -1.039392 2.120e+00 0.405883 -0.615240 0.5357291 -0.4968401  
## 99 -1.110635 1.863e+00 0.523118 -0.432688 0.7766422 -0.6822827  
## 100 -1.269262 1.163e+00 0.827847 0.747246 1.3926046 1.5343164  
## 101 -1.570901 2.942e+00 1.994028 -0.591057 1.1424186 -0.5929756  
## 102 -1.110560 2.669e+00 1.919091 -0.798407 0.8989142 -0.2161169  
## 103 -1.073344 1.731e+00 1.162439 -0.237671 0.8516985 -0.0972607  
## 104 -1.744114 1.043e+00 0.195226 0.852329 0.2852291 -1.7000155  
## 105 -1.834560 1.459e+00 0.533648 0.500895 0.7124392 -0.6188762  
## 106 -2.916752 3.111e+00 2.937168 0.563959 1.4081906 -1.3688237  
## 107 -2.431270 2.115e+00 1.598607 0.618433 0.9084092 -1.3181775  
## 108 -2.450177 1.859e+00 1.730692 0.571465 0.1137458 -1.4967949  
## 109 -1.982288 1.255e+00 1.060664 0.566589 0.2951001 -1.0120894  
## 110 -2.353771 1.967e+00 1.765322 0.712710 0.3129541 -0.9941252  
## 111 -1.604212 2.116e+00 0.980023 -0.068257 1.8361670 -1.0649466  
## 112 -2.227592 9.451e-01 0.842215 1.479655 1.8273108 -0.5453310  
## 113 -2.445733 1.784e+00 0.978033 1.728694 3.4329140 -1.9806171  
## 114 -1.885109 1.125e+00 0.448370 0.800796 0.5208561 -1.1996820  
## 115 -0.304786 -6.771e-01 -1.111305 0.342633 -1.3402831 -0.4078100  
## 116 0.276037 -9.352e-02 -1.010578 -0.491746 -0.2800203 -0.1375273  
## 117 0.532566 -2.107e-01 -0.188734 -0.754715 -0.5577243 -0.1845483  
## 118 -0.862861 3.039e-01 -0.767385 0.045147 -0.3876216 0.3232966  
## 119 -0.435486 -7.399e-01 -2.652552 0.500985 -1.4523670 -1.8244253  
## 120 -0.628903 -7.919e-01 -2.679074 0.680855 -1.4112184 -1.9418979  
## 121 -0.721362 -6.732e-01 -1.975588 0.916805 1.2078850 -0.9735306  
## 122 -0.691385 -1.318e+00 -1.790965 0.947346 -0.5590411 -0.9019728  
## 123 -0.587007 -1.055e+00 -1.475683 0.690105 -0.6186689 -1.1073035  
## 124 -0.540306 -8.491e-01 -1.487622 0.302053 -0.7758494 -1.9883868  
## 125 -0.609092 -8.569e-01 -2.134990 1.143177 0.4513076 -1.5763542  
## 126 -0.648911 -1.145e+00 -1.297794 0.613263 -0.8258394 -2.0311113  
## 127 -0.586304 -7.817e-01 -2.177911 1.064233 0.4489687 -1.5659504  
## 128 -1.086490 -6.228e-01 -1.701935 0.738008 -0.1279113 -1.0475998  
## 129 -0.700766 -1.169e+00 -1.640537 0.851321 0.4040557 -1.0087384  
## 131 -0.817993 -1.207e+00 -1.759061 0.768499 -0.5602274 -1.8312796  
## 132 -0.700740 -9.261e-01 -1.657957 1.057453 1.2103023 -0.9351955  
## 133 -0.619301 -1.127e+00 -1.399432 0.590239 -0.8249257 -0.5718501  
## 134 -1.092201 -9.757e-01 -2.621472 0.998638 -1.2490308 -1.0187360  
## 135 -1.240230 -6.321e-01 -1.530068 1.066262 -0.5090467 0.1865957  
## 136 -0.532587 -1.158e+00 -1.685694 0.545755 -0.3409934 -1.6020624  
## 137 -0.608271 -1.054e+00 -1.239365 0.589161 -0.1583003 -1.2937228  
## 138 -0.911803 -1.336e+00 -1.699477 1.392317 0.6894490 -1.6398338  
## 139 -0.854260 -1.042e+00 -1.024198 0.961262 1.9128825 -0.7427562  
## 140 -0.917817 -1.263e+00 -1.177664 1.335837 3.1679257 0.8709330  
## 141 -0.681111 -8.776e-01 -1.468850 1.142167 2.0963366 -1.3139312  
## 142 -1.252514 -1.119e+00 -1.642584 2.273953 2.6571602 -1.2951990  
## 143 -0.790303 -8.948e-01 -1.465334 1.043141 1.4804049 -0.4234351  
## 144 -0.589399 -1.075e+00 -1.670309 1.007508 1.6382935 -1.7594195  
## 145 -0.864990 -1.087e+00 -0.801909 1.473346 3.5648434 -1.3683265  
## 146 -1.116167 -9.460e-01 -1.499122 1.976778 3.3780558 -0.3998500  
## 147 -0.840555 -2.396e-01 -0.657398 0.342715 -0.0669306 -1.2720313  
## 148 -0.669566 -1.842e-01 -0.994770 0.050147 -0.2107077 -0.9695371  
## 149 -0.856433 3.917e-01 -0.469891 0.261621 1.0100921 -0.9460630  
## 150 -0.774295 -7.978e-02 -0.958327 0.356343 0.4562570 -0.8755773  
## 151 -1.412415 -3.700e-01 -0.559303 1.836834 6.1071839 0.8196041  
## 152 -1.490426 -5.367e-01 -0.491187 2.063725 6.2154016 0.7504211  
## 153 -1.571068 -5.061e-01 -1.016987 3.159217 9.1604061 0.3476854  
## 154 -1.444994 -6.809e-01 -1.323966 2.830767 6.6079499 0.3140128  
## 155 -0.848455 -3.739e-01 -1.624224 0.242966 -1.1747595 -0.7665949  
## 156 -0.966850 -1.986e-01 -0.883398 0.206656 0.0293895 0.5212002  
## 157 -0.712609 1.889e-01 -1.575327 0.280872 0.2514703 0.5877930  
## 158 -1.186080 -1.242e-01 -0.969511 0.505731 -0.7478296 0.1401328  
## 159 -0.561387 -1.045e+00 -0.363338 -0.104258 1.2560455 -1.7417479  
## 160 -0.483704 -1.020e+00 -0.676982 0.007078 1.0696268 -1.5630079  
## 161 -0.462893 -1.064e+00 -0.614698 0.036840 1.8990052 -1.6547851  
## 162 -0.450300 -6.376e-02 -1.613794 -0.431035 0.9083600 0.4585062  
## 163 -0.761890 -6.535e-01 -1.902080 0.799815 1.0885646 -1.0731163  
## 164 -0.435589 -1.252e+00 -0.801987 0.721690 3.6704094 -2.2301769  
## 165 -0.625450 -1.371e+00 -0.829583 0.607943 1.5801523 -1.4395049  
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## 168 -0.829908 -7.967e-01 -1.289736 0.498809 -0.6371442 -0.2292921  
## 169 -1.558518 -8.285e-01 -0.606878 1.483212 0.5962579 2.1741053  
## 170 -1.852210 9.414e-02 -0.390064 2.459595 4.4951344 -1.4599738  
## 171 -2.094289 3.396e-01 -0.586151 2.838845 5.5699683 -2.3958467  
## 172 -1.483277 -2.064e-01 -0.180020 0.995516 0.0130551 -1.4649917  
## 173 -1.815554 4.000e-02 -1.638608 2.288303 2.5431896 -2.4656957  
## 174 -2.055220 8.753e-01 0.281531 1.664700 1.4044542 -1.5516397  
## 175 -1.385304 -5.483e-01 -2.001314 0.980376 -1.3693255 -2.9814934  
## 176 -1.115090 -4.166e-01 -2.086822 0.755844 -1.0606306 -1.5385612  
## 177 -2.533719 1.572e+00 1.805086 0.629217 -0.0569397 0.9999498  
## 178 -0.004122 -9.341e-01 0.596514 -0.507648 -0.2592042 -0.4705591  
## 179 -1.020272 -7.906e-01 -0.014935 0.692348 0.6176876 2.5501974  
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## 181 -0.481311 -8.091e-01 -0.204282 -0.233738 -0.9102044 1.1437476  
## 182 -0.713601 -1.217e+00 -0.447240 0.626964 -1.1142411 3.3305728  
## 183 -0.714441 -1.509e+00 -0.951759 0.635385 -0.6061932 2.4479922  
## 184 -0.745856 -1.310e+00 -0.824561 0.517533 -0.8368190 1.2473686  
## 185 -0.687120 -7.580e-01 -0.637809 0.013958 -0.9323653 0.6765935  
## 186 -0.619975 -1.254e+00 -0.795896 0.414618 -1.0561923 1.0182943  
## 187 -0.535024 -1.194e+00 -0.091535 0.472856 -0.4246290 0.9368404  
## 188 -0.512929 -8.615e-01 -0.627734 0.154670 -1.0419126 0.3940562  
## 189 -0.985700 -1.360e+00 -1.211345 1.238141 0.0545698 1.8950383  
## 190 -0.625220 -1.158e+00 -0.433762 0.776345 0.6169633 -0.4226306  
## 191 -0.843775 -9.027e-01 -0.255661 0.429493 -0.2962619 1.5545357  
## 192 -0.874210 -5.542e-01 -0.093866 0.321519 -0.9718576 0.0040693  
## 193 -0.604154 -1.191e+00 -0.738154 0.196707 -1.2068168 0.0744643  
## 194 -0.682705 -1.056e+00 -0.484628 0.356229 -0.9406283 0.4267533  
## 195 -0.540884 -7.967e-01 -0.294935 0.370956 0.8160726 0.9897325  
## 196 -0.554422 -1.261e+00 -0.545071 0.396293 0.0022235 1.3329693  
## 197 -1.055097 -3.635e-01 0.158119 0.451602 -0.6578205 -0.1566640  
## 198 -0.598376 -8.136e-01 -0.270671 0.122833 -0.5599161 0.9106046  
## 199 -0.722143 -1.160e+00 -0.510852 0.457251 -0.9449341 0.6717952  
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## 201 -0.895300 -8.704e-01 -0.516685 0.722393 0.2492997 -0.0699024  
## 202 -0.927852 -7.212e-01 -0.284190 0.358076 -1.1819400 -0.3308168  
## 203 -0.864288 -7.857e-01 -0.523567 0.477479 -0.9379876 0.0513729  
## 204 -0.601424 -8.655e-01 0.042409 0.038230 -0.7061581 1.1017909  
## 205 -0.756306 -1.063e+00 -0.777685 0.585256 -1.4800653 0.5053741  
## 206 -0.448103 -7.195e-01 -0.169542 -0.328058 -0.2451662 0.2222855  
## 207 -0.643984 -1.112e+00 -0.286375 0.021262 -0.4532528 0.1539192  
## 208 -0.840061 -1.289e+00 -0.616143 0.680075 -0.4260863 2.3952259  
## 209 -0.732854 -7.679e-01 -0.645555 0.327628 0.2578827 0.4042860  
## 210 -0.696972 -1.195e+00 -0.634892 0.445283 -0.5400805 0.7979177  
## 211 -0.804090 -1.195e+00 -0.818015 0.505035 -0.6117801 0.6467257  
## 212 -0.804258 -1.512e+00 -1.068077 0.656426 -0.7595385 -0.0586126  
## 213 -1.033039 -8.069e-01 -0.344282 0.667978 -0.6691428 1.1016525  
## 214 -0.738317 -1.256e+00 -0.707436 0.583624 -0.5542826 1.8834831  
## 215 -0.993766 -8.401e-01 -0.595572 0.522507 -0.5974223 1.4389423  
## 216 -0.828095 -1.075e+00 -0.479541 0.406284 -0.6674839 1.0150519  
## 217 -1.109722 -1.001e+00 -0.712213 0.624712 0.0195136 2.4156015  
## 218 -0.934429 -1.073e+00 -0.835504 0.688827 -0.3227144 1.3772888  
## 219 -1.004474 -6.287e-01 -0.642770 0.393495 -0.5758164 1.9084044  
## 220 -0.760602 1.074e+00 1.817475 -0.923551 -0.0022819 0.4927891  
## 221 -0.708652 8.945e-01 1.763207 -0.552700 -0.0164851 -0.2713301  
## 222 -0.513057 6.633e-01 1.114835 -0.631338 -0.1611366 0.1572568  
## 223 -0.525884 8.820e-01 1.264071 -0.745127 -0.0778829 0.4003066  
## 224 -0.844824 1.018e+00 1.498420 -0.180415 0.4426910 0.2502715  
## 225 -0.640342 8.193e-01 1.285496 -0.577285 -0.0899081 -0.1800085  
## 226 -0.304235 4.785e-01 -0.073776 -0.807130 -1.0122507 1.3582901  
## 227 -0.881329 1.184e+00 1.092554 -0.363991 0.3081280 0.6172040  
## 228 -0.839040 1.468e+00 0.993631 -0.656995 -0.6141574 0.6671164  
## 229 -0.983593 1.325e+00 1.422479 -0.694483 -0.5968630 1.3187222  
## 230 -0.717228 1.346e+00 1.607803 -0.768218 -0.7157627 1.2015613  
## 231 -0.503635 1.011e+00 1.238343 -0.698057 -0.2707071 0.7095676  
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## 245 -1.502724 1.603e+00 1.734260 -0.264518 -0.5376806 1.0005532  
## 246 -1.657488 1.426e+00 2.178557 0.046145 -0.2584940 1.9346474  
## 247 -1.254437 7.202e-01 1.264992 0.226309 0.0110037 1.9124608  
## 248 -1.256879 8.524e-01 1.123697 0.039594 -0.3339723 1.6191771  
## 249 -1.283300 8.647e-01 1.353676 -0.029123 -0.1382488 1.7150543  
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## 252 -1.201025 6.064e-01 1.115595 0.197684 0.2638617 2.3136987  
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## 254 -1.599825 1.250e+00 1.742754 0.303951 0.2048745 1.0994407  
## 255 -1.648924 1.449e+00 2.059224 0.040836 0.1176209 1.0563258  
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## 257 -1.450399 1.302e+00 1.500008 0.074122 0.1673883 0.5486953  
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## 266 1.682316 7.505e-01 -0.473727 2.862615 -0.6316890 0.2100618  
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## 324 1.168284 5.547e-01 -0.428107 0.524840 -0.4155517 0.3949610  
## 325 1.041660 2.118e-01 0.628659 1.551613 -0.9573789 -0.0480427  
## 326 1.223887 2.082e-01 0.763614 1.029608 -0.6290225 0.2040048  
## 327 1.629924 9.295e-01 -0.264686 2.158828 -0.8358418 0.6701864  
## 328 1.416791 9.351e-01 -0.106429 3.148801 1.4664681 0.1859835  
## 329 0.986950 1.048e+00 -0.970391 0.974615 -1.1137316 -0.0626753  
## 330 1.444188 9.747e-01 -0.785384 1.581298 0.7449765 -0.0237175  
## 331 1.608742 6.411e-01 0.247056 2.181592 -0.3894472 0.2289679  
## 332 1.636188 1.656e+00 -2.604345 -0.179883 1.5437609 1.7873897  
## 333 1.662507 1.292e+00 -0.735781 1.950650 -0.4348237 -0.1601779  
## 334 1.598220 1.356e+00 -1.628481 0.540207 0.9551369 1.3483754  
## 335 2.038460 1.594e+00 -0.182162 4.133371 -1.0958514 0.2871812  
## 336 1.386361 1.487e+00 -1.150715 -0.208847 1.7647836 0.1596951  
## 337 2.014022 1.414e+00 -0.575592 3.910310 0.9481875 -0.1734700  
## 338 1.504299 1.388e+00 -1.481749 -1.437090 1.4680739 1.2382397  
## 339 1.948547 1.554e+00 -0.504668 1.946607 -0.3687730 -0.4132047  
## 340 1.325189 1.295e+00 -1.440492 -1.178895 0.5988871 0.0906927  
## 341 1.120395 5.601e-01 -0.874938 -1.707943 0.5062186 0.2107494  
## 342 1.892266 2.043e+00 -1.656355 -0.436965 0.6705217 0.4659465  
## 343 1.458923 1.053e+00 -1.494442 -1.519492 1.7551171 0.7410227  
## 344 1.554585 9.730e-01 -0.495734 -1.248659 1.0450986 0.0332806  
## 345 1.262559 1.150e+00 -1.600880 -1.213870 0.7420779 0.5622542  
## 346 1.515357 1.235e+00 -0.887029 -0.562610 2.0940439 -0.4567773  
## 347 1.136930 -1.613e-01 -0.176838 -0.468744 0.6813419 0.1477834  
## 348 1.594396 9.429e-01 -0.723559 -0.232573 0.8739940 0.3299815  
## 349 1.332130 3.462e-01 -0.080892 -0.302296 0.6452554 -0.3546665  
## 350 1.452774 7.214e-01 -0.335360 0.767237 0.1357748 0.4621550  
## 351 1.714601 9.768e-01 0.306149 2.143606 -1.0274299 0.1890005  
## 352 1.200588 -2.404e-01 0.933064 -1.065186 0.0912156 -0.3666674  
## 353 1.417333 7.629e-01 0.917623 0.991400 -0.4519168 -0.2459251  
## 354 1.638685 8.344e-01 1.127518 0.857901 -0.3723567 -0.1417275  
## 355 1.776739 8.134e-01 0.776178 1.490852 -0.8600935 -0.3291073  
## 356 1.483167 5.654e-01 -0.357734 0.451015 1.3938140 1.1389232  
## 357 1.716894 7.469e-01 0.544594 0.940557 -0.3464106 -0.0001158  
## 358 1.075619 5.236e-02 0.083787 -0.091340 0.1846792 -0.3310405  
## 359 0.827129 -3.769e-01 0.578671 -0.360573 -0.3613245 -0.5289707  
## 360 1.306045 6.248e-01 0.102043 1.761543 0.3824041 0.8299216  
## 361 1.397846 5.983e-01 0.127471 1.002750 -0.2137434 -0.0341653  
## 362 1.536165 5.989e-01 0.388350 0.752566 0.4197872 0.2780320  
## 363 1.714040 1.035e+00 0.335669 -0.806315 -0.2203932 -0.8029655  
## 364 1.464236 6.946e-01 -1.018480 -0.501030 1.1400637 0.5920198  
## 365 1.323754 5.094e-01 -0.328387 -0.543219 0.3470375 -0.6201609  
## 366 1.306103 4.499e-01 -0.599139 -0.480467 0.8764097 -0.6018255  
## 367 1.187921 6.475e-01 -0.396484 -0.208494 0.2314010 -0.2501585  
## 368 1.378098 3.081e-01 0.414301 0.751305 1.6059828 0.0840328  
## 369 1.353559 6.589e-01 -0.725004 0.563642 0.6839115 -0.0231534  
## 370 1.405400 3.077e-01 0.007415 -0.436286 0.8814741 -0.7702776  
## 371 1.021257 1.576e-01 -0.424202 -0.569047 0.3079660 -0.0132492  
## 372 1.308229 2.316e-01 0.109146 -0.492872 0.3974344 -0.6248303  
## 373 1.394407 5.997e-01 -0.515288 -0.889839 0.7257582 0.7936293  
## 374 1.332292 4.748e-01 -0.340690 -1.143902 0.9111530 -0.6814056  
## 375 1.302822 4.209e-01 -0.317879 -0.486409 0.6621571 -0.0999891  
## 376 1.376655 4.421e-01 -0.280285 0.094093 0.6665945 0.0709059  
## 377 1.394368 7.009e-01 -0.215561 -0.205853 0.4239413 -0.5674094  
## 378 1.265882 2.238e-01 -0.050360 -0.987350 0.4743574 -0.3322190  
## 379 0.815873 2.300e-01 -0.569856 -1.147302 -0.4258636 0.0017226  
## 380 0.924228 3.558e-01 -0.544027 -1.128153 -0.4002602 -0.0625040  
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## 382 0.757582 -7.241e-02 -0.064266 -0.987808 -0.4069948 0.1811103  
## 383 0.669008 -1.551e-01 -0.027100 -1.134979 -0.4966595 0.1671983  
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## 387 1.060509 3.414e-01 -0.832915 -0.797623 0.4694168 0.2411816  
## 388 1.097468 3.716e-01 -0.956259 -1.224462 1.2644436 0.2939855  
## 389 1.288222 6.935e-01 -0.002718 -0.365831 0.0413391 -0.5913692  
## 390 1.193899 5.750e-01 -0.789734 -0.606670 0.2979840 0.4407086  
## 391 1.221611 -5.830e-02 0.004714 -0.255652 0.9529446 -0.1793998  
## 392 1.551255 6.470e-01 -0.513360 -0.347935 0.8512080 0.5716311  
## 393 0.765977 -1.682e-01 0.566749 -0.717717 0.8568221 -0.4610508  
## 394 1.170147 1.518e-01 -0.354722 -0.070238 0.4610856 0.2088793  
## 395 0.829573 1.052e+00 -2.217166 -1.580960 2.2055723 1.4212421  
## 396 1.053529 1.383e+00 -2.629242 -1.740552 1.5898669 2.4324581  
## 397 0.860477 1.109e+00 -2.265867 -2.043436 1.2658605 2.3011242  
## 398 1.130049 1.550e+00 -2.235466 -2.016082 0.8108721 1.0274365  
## 399 1.427304 1.977e+00 -2.014820 -2.158158 0.5932651 1.1257874  
## 400 1.868284 2.417e+00 -1.934099 -0.259885 0.1733874 0.9269158  
## 401 1.741844 2.436e+00 -2.423203 -0.024795 0.7867913 1.4832016  
## 402 1.555303 2.325e+00 -2.012693 -0.476171 0.1795800 1.0141561  
## 403 1.545863 1.977e+00 -2.202369 -0.304163 1.9103255 1.1864036  
## 404 1.491141 2.828e+00 -2.941643 -1.461350 0.4723994 1.2542308  
## 405 1.935554 2.871e+00 -2.451283 -0.733514 0.0465703 1.1135471  
## 406 1.754881 2.666e+00 -2.496517 -1.094066 0.6407096 1.4899532  
## 407 1.396663 2.331e+00 -2.425936 -0.914690 0.5293530 1.5604488  
## 408 1.263092 2.227e+00 -2.321229 -2.712410 0.4889745 0.6812908  
## 409 1.323951 1.881e+00 -1.689064 0.100511 1.2049658 0.8225488  
## 410 0.686290 8.056e-01 -1.964705 -1.300673 2.8753175 2.3680385  
## 411 1.004688 1.675e+00 -2.479540 -1.510559 2.2600869 1.6975694  
## 412 0.898573 9.713e-01 -1.005158 -2.047857 0.8890067 0.4566799  
## 413 1.274810 1.840e+00 -1.585414 -2.425742 0.3611249 0.1857541  
## 414 1.568225 2.430e+00 -1.863725 -2.601909 0.6912075 -0.4362168  
## 415 1.414219 1.877e+00 -1.052091 -0.370512 0.1119961 0.1074169  
## 416 0.891115 1.132e+00 -0.531284 -2.032339 -0.1134732 -0.4182799  
## 417 1.094258 1.704e+00 -1.853136 -3.048002 -0.2556709 -0.4333155  
## 418 0.786554 6.463e-01 -0.022871 -1.538823 1.4000069 0.0748073  
## 419 0.454074 6.104e-01 -0.200331 -1.261868 0.3225988 -0.6777271  
## 420 1.137793 3.875e-01 -0.029395 -2.398848 0.1658995 -0.4079480  
## 421 1.253772 9.596e-01 -0.379259 -1.073029 1.3328856 -0.5561039  
## 422 1.024810 1.049e+00 -0.317796 -0.045054 -0.7185914 -0.9101218  
## 423 1.366371 1.207e+00 -0.709257 -1.723502 0.4888471 -1.0731124  
## 424 0.777438 4.532e-01 -0.383342 -1.771197 -0.7376889 0.2278477  
## 425 1.217541 1.402e+00 -0.527989 -1.419350 -0.6274948 -0.9764621  
## 426 0.167739 -1.143e+00 0.524167 -0.487361 -0.3972512 -0.2391762  
## 427 0.636522 -8.365e-01 1.329771 -0.307379 0.1161941 -0.5196155  
## 428 0.682801 4.755e-01 -1.368826 -0.186377 -0.5078884 -0.8457251  
## 429 0.756108 -1.042e+00 1.294482 -0.189325 0.0538043 -0.5717779  
## 430 1.840552 1.629e+00 0.264512 1.456272 -0.7196574 -0.6023415  
## 431 1.169674 7.563e-01 -0.113567 -1.689633 0.5714486 -0.7009735  
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## 433 1.321700 3.270e-01 0.271392 -1.292883 1.0062187 -1.1261342  
## 435 1.223884 8.910e-01 -0.486089 -1.708677 0.5103437 -1.4512236  
## 436 0.090627 -1.159e+00 0.907966 -0.341308 -0.1686845 0.4827214  
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## 438 0.724275 -9.923e-01 1.470683 -0.382015 0.1498798 -0.6102581  
## 439 0.782898 -1.375e+00 1.399397 -0.622381 0.2421155 -0.5135426  
## 440 1.006870 7.565e-01 0.354861 -1.469237 -0.0733401 -0.5001831  
## 441 1.064792 -7.165e-01 1.488662 -0.158149 0.1165311 -0.9603603  
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## 451 0.323566 -3.682e-01 0.750801 -0.374801 0.3157687 0.1042749  
## 452 0.337117 -5.349e-01 0.950860 -0.381190 1.8911602 -0.8311168  
## 453 0.365872 -6.974e-01 0.701952 -0.456594 0.2397784 -0.2649922  
## 454 0.329941 -9.489e-01 0.921698 -0.213375 -0.2473952 -0.5977853  
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## 459 0.613183 -1.033e+00 1.149392 -0.394884 -0.2330658 -0.1611877  
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## 464 0.457222 -9.045e-01 0.718057 -0.064519 -0.0320079 -1.0170711  
## 465 1.436784 -5.727e-01 1.986084 0.242711 -0.1883899 -0.7567913  
## 466 1.049350 -1.038e+00 1.655411 -0.358188 -0.2244472 -0.5007669  
## 467 1.343874 1.230e+00 -0.320390 -1.191840 -0.3908569 -1.2942536  
## 468 0.508026 -1.089e+00 0.959720 -0.021552 -0.0020626 -0.0917925  
## 469 0.373777 -4.822e-01 0.943036 -0.167788 -0.4527930 0.3050168  
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## 471 0.597328 -9.784e-01 1.104374 -0.353611 0.5528598 -0.9371333  
## 472 1.253387 6.322e-01 0.654375 -1.571797 0.4925021 -1.4320402  
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## 480 0.447924 -5.323e-01 0.769480 -0.053884 0.7032165 -1.1271558  
## 481 0.954166 5.964e-01 -0.609228 -2.398278 0.5655770 -1.7675227  
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## 484 1.152770 -7.397e-01 1.512085 0.017580 0.2549720 -0.7846600  
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## 495 1.488804 3.361e-01 0.619169 -0.677992 0.5072395 -1.4713485  
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## 497 0.510172 -9.960e-01 1.014785 0.130656 -0.3354477 -0.3833240  
## 498 0.764279 -3.688e-01 0.830487 -0.684911 -0.1582547 -0.9921695  
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## 506 0.508562 -9.718e-01 1.164018 -0.497752 0.4777295 -0.8357263  
## 507 0.595799 -9.663e-01 1.016270 -0.105203 0.1671241 -1.1009814  
## 508 0.820396 -3.429e-01 0.907396 0.155066 0.3138905 -0.2567517  
## 509 0.306597 -1.039e+00 0.691358 -0.205189 0.3337045 -0.2752340  
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## 511 0.349624 -8.674e-01 0.691334 0.143820 -0.7000373 -0.5833943  
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## 525 0.911930 -1.002e+00 1.691649 -0.271440 0.2748977 -0.9533089  
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## 527 0.516272 -9.086e-01 1.147484 -0.744754 1.0011088 -0.6472344  
## 528 0.635112 -9.352e-01 1.110271 0.085257 -0.3497820 -0.9625317  
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## 531 0.341964 -9.566e-01 1.232562 -0.384258 0.3559249 -0.7587061  
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## 536 0.179374 -1.079e+00 0.548645 -0.207394 -0.5218809 -0.0369772  
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## 542 0.561448 -8.870e-01 1.085232 0.190827 -0.1964173 0.0980497  
## 543 0.252480 -7.912e-01 1.159107 -0.189699 -0.4155437 -0.6571546  
## 544 0.213645 -1.213e+00 0.379557 -0.172231 -0.6033291 -0.4113062  
## 545 0.308947 -1.166e+00 0.600830 -0.366779 -0.5056554 -0.7605305  
## 546 -0.022203 -1.123e+00 0.381305 -0.246068 -0.7388436 -0.0701488  
## 547 0.617334 -9.830e-01 1.065685 0.071364 -0.1564806 -0.6471973  
## 548 0.340740 -7.359e-01 0.301729 -0.821247 0.7853217 0.9439500  
## 549 0.454990 -9.601e-01 1.401213 -0.558111 1.1020023 -0.1227700  
## 550 0.455697 -8.263e-01 1.162153 0.073539 0.8938643 -0.4972547  
## 551 0.455386 -9.138e-01 0.789081 -0.147160 0.1114483 0.0513375  
## 552 0.480049 -1.097e+00 1.334868 -0.650049 0.1865729 -0.1353490  
## 553 0.051843 -9.151e-01 0.960530 -0.768245 -0.0454438 0.3581061  
## 554 0.359448 -1.146e+00 1.310782 -0.756191 0.0016033 -0.1493410  
## 555 0.113847 -1.040e+00 0.803375 -0.685296 0.6089115 -0.1897837  
## 556 0.718589 -1.026e+00 1.202731 -0.137866 -0.2048204 -0.7763967  
## 557 0.444410 -8.497e-01 1.018340 -0.344982 0.4694548 -0.2369872  
## 558 0.150025 -7.036e-01 0.974097 -0.762051 0.0865808 0.7545666  
## 559 0.429149 -8.954e-01 0.698924 -0.768591 0.0840757 0.3270959  
## 560 0.218963 -7.661e-01 0.933029 -0.765287 0.1799622 0.5934117  
## 561 0.436195 -9.324e-01 0.660180 -0.815101 0.1725768 0.1904545  
## 562 0.466304 -1.103e+00 0.884054 -0.100857 0.2942195 -0.6591426  
## 563 0.591378 -1.172e+00 1.347473 -0.126689 0.2461498 1.6277230  
## 564 0.719421 -3.770e-01 1.438596 -0.248295 0.9579468 -0.7594390  
## 565 0.249873 -1.226e+00 0.729566 -0.594442 0.3698299 -0.7219020  
## 566 0.507082 -7.176e-01 1.174342 -0.146026 0.6805228 -0.0961045  
## 567 0.699587 -7.673e-01 0.910791 -0.698267 0.5330253 -0.8252340  
## 568 0.429157 -1.045e+00 1.177201 -0.399825 1.1110211 -0.3230407  
## 569 0.219883 -8.839e-01 0.643385 -0.571073 0.8988447 -0.2833582  
## 570 0.036320 -7.076e-01 0.312382 -0.253111 0.4941914 -0.1738392  
## 571 0.488020 -1.265e+00 1.020374 -0.802871 0.4731399 -0.4262253  
## 572 -0.028038 -9.427e-01 0.278244 0.027110 0.3772844 -0.0044806  
## 573 0.171772 -1.182e+00 0.241409 -0.609800 0.2226235 -0.4706312  
## 574 0.506940 -1.243e+00 0.731032 -0.232427 0.5599569 -0.8380862  
## 575 0.211165 -8.586e-01 0.430975 -0.045687 -0.4189949 -0.1368061  
## 576 0.337778 -8.726e-01 0.895445 -0.082228 1.1303889 0.1694567  
## 577 0.225213 -1.205e+00 0.463075 -0.530688 0.4792231 -0.4880514  
## 578 0.389677 -1.131e+00 0.867562 -0.369243 -0.2027830 -0.1469732  
## 579 0.395163 -1.184e+00 0.810774 -0.368319 0.3634094 -0.3890272  
## 580 0.598085 -6.970e-01 1.302534 -0.771932 -0.2409061 -0.1159149  
## 581 0.357554 -8.379e-01 1.062153 -0.759909 -0.0104790 -0.6332677  
## 582 0.619631 -1.163e+00 0.547383 -0.948823 1.9316607 -2.2828340  
## 583 0.778081 -7.725e-01 1.057336 -0.587053 0.9799383 -0.8564523  
## 584 0.784431 1.799e-01 -0.686357 -0.860236 -0.5555677 0.3030852  
## 585 1.179814 2.713e-01 -0.312537 -0.447778 -0.0683284 0.6912432  
## 586 1.410054 -4.451e-02 0.789348 -0.332991 -0.3320650 -0.1136190  
## 587 0.995692 1.248e-01 -0.234566 -0.815226 -0.3641482 -0.0307835  
## 588 0.474869 -4.251e-01 -0.219303 -0.145111 -0.7860591 -0.1487145  
## 589 0.852581 -1.352e-01 0.483462 -0.167962 -0.3497945 0.2483151  
## 590 0.258121 2.972e-01 0.329539 0.324767 -0.1198382 -0.4307801  
## 591 0.785791 -6.918e-02 0.142500 -0.902842 -0.1546654 -0.3687229  
## 592 1.252925 9.404e-02 0.164847 0.837356 -0.6302012 0.6532197  
## 593 0.683851 -5.394e-01 0.526660 -0.485407 -0.1115225 0.0013207  
## 594 0.283780 -6.652e-02 0.481581 -0.156159 -0.5324895 -0.0110512  
## 595 0.604765 4.257e-01 0.017187 0.345182 -0.9361766 0.1417319  
## 596 0.416530 1.021e-01 -0.400712 -0.516631 -0.6515080 0.5223362  
## 597 0.490638 -1.728e-01 -0.517247 -0.392642 -0.0454324 0.3406150  
## 598 0.675534 5.430e-02 -0.475818 -0.603097 -0.5896125 -0.0170982  
## 599 0.395931 2.684e-01 0.453095 -0.477254 -0.9072182 0.6714533  
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## 601 0.948777 -5.089e-01 0.329003 -0.401358 -0.0710992 -0.8418808  
## 602 0.694409 6.850e-02 -0.137892 0.751930 -0.6612138 0.1220277  
## 603 0.664344 -2.571e-01 0.224053 0.712171 -0.8005070 -0.5028874  
## 604 0.251908 -1.879e-01 -0.081507 -0.504564 -0.7581036 -0.4233568  
## 605 0.367256 -1.030e-01 -0.224681 -0.250154 -0.5477958 -0.2249999  
## 606 0.273320 -2.055e-01 -0.201994 -0.351232 -0.7979206 -0.0894508  
## 607 0.169538 -2.093e-02 -0.145212 -0.211248 -0.7161024 -0.1619516  
## 608 0.288475 1.143e-01 -0.300717 -0.353674 -0.8572333 -0.2278308  
## 609 0.498543 -1.977e-01 -0.505414 -0.761307 -0.6027881 -0.1837932  
## 610 0.193899 -2.731e-01 -0.344971 -0.124904 -0.6069507 -0.9989063  
## 611 0.449313 -4.137e-01 -0.207618 -0.537418 -0.2496064 -0.1747936  
## 612 0.220817 -2.057e-01 -1.003766 0.454296 -0.9063011 -0.2487756  
## 613 0.065629 -5.433e-01 0.155316 -0.515457 -0.9479212 0.1662574  
## 614 0.100961 -9.729e-02 0.415353 0.632571 -0.4391097 0.2926730  
## 615 0.496419 -5.660e-01 -0.322464 -0.680888 -0.6199779 0.3035621  
## 616 0.597820 -4.730e-01 -0.069288 -0.559174 -0.3060545 0.3788862  
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## 618 0.555446 2.505e-01 -1.542728 -1.231578 0.0433984 0.7953844  
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## 620 0.862248 -2.182e-01 0.170213 -0.709896 0.5392918 -0.6982078  
## 621 0.545623 1.043e-02 -1.162517 -0.367714 1.6140011 0.9026028  
## 622 0.529874 4.758e-01 -1.401520 -0.886802 0.5211696 0.5556063  
## 623 0.252185 -2.555e-01 -0.916284 -0.616088 -0.0933942 0.7678327  
## 624 0.292442 -7.469e-02 -0.972454 -0.556512 0.0746283 0.9952505  
## 625 0.761563 2.245e-01 -1.004365 -0.901616 0.3117301 0.6825924  
## 626 0.330432 2.540e-01 -0.986889 -0.623588 0.0881911 0.9561482  
## 627 0.959860 -3.244e-01 0.105735 -0.231352 0.0006589 -1.2285263  
## 628 0.960575 -1.953e-01 0.112542 -0.460675 -0.0703403 -0.2603067  
## 629 0.529817 -3.151e-01 -0.231520 -0.239142 -0.1172826 0.1403633  
## 630 0.682373 -5.536e-01 0.014037 -0.419028 -0.4899873 0.0369902  
## 631 0.670698 -3.792e-01 -0.292747 -0.513473 -0.4695607 0.0842062  
## 632 0.654919 -1.847e-01 -1.171783 0.478841 1.1012388 -0.1111515  
## 633 0.462504 -2.467e-01 -1.272139 -0.722678 0.2441745 -0.2169297  
## 634 0.505438 -2.123e-01 -0.334893 -0.507432 -0.2115245 0.0046978  
## 635 0.459798 -4.381e-01 -0.286870 -0.335115 -0.3094451 -0.5756889  
## 636 0.868299 -4.222e-01 0.017417 -0.618539 0.4564015 -0.8775227  
## 637 0.881693 -1.906e-01 0.131431 0.199235 -0.7348436 -0.7629462  
## 638 0.715146 -3.933e-01 -0.126146 -0.115922 -0.3641973 -0.6843186  
## 639 0.644960 -6.328e-01 0.161471 -0.342924 -0.5843337 -0.2586873  
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## 641 0.487818 -3.927e-01 -0.273680 -0.611353 -0.5529320 0.1185777  
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## 643 0.684257 -4.013e-01 -0.271990 -0.330581 -0.2556719 -0.8016786  
## 644 0.482264 -5.480e-01 -0.514475 -0.487758 0.1104071 -0.3776789  
## 645 0.399341 -2.594e-01 -1.020190 -0.413859 0.0733443 0.1882095  
## 646 0.323147 -4.519e-01 -0.937803 -0.334064 0.4220445 -0.6747329  
## 647 0.269188 -4.243e-01 -0.345881 -0.398441 0.0206487 -0.5579045  
## 648 0.700244 -4.861e-01 -0.175302 -0.483734 0.2957271 -0.7067251  
## 649 0.324856 -4.642e-01 -0.799101 -0.280297 -0.3063598 -0.4596768  
## 650 0.372607 -2.373e-01 -0.914098 -0.824787 0.6879073 -0.2208021  
## 651 0.225048 -7.228e-01 -0.373682 -0.289600 -0.0848405 -0.6556491  
## 652 0.536976 -4.462e-01 -0.202848 -0.448507 -0.4684130 -0.4742786  
## 653 0.489253 2.543e-01 -1.128886 -0.999340 -0.4800692 0.4776153  
## 654 0.394589 -5.133e-01 -0.494054 -0.490813 -0.0319006 -0.8734825  
## 655 0.365077 -5.630e-01 -0.918285 -0.493459 -0.7419780 -0.4081326  
## 656 0.249546 -4.019e-01 -0.596992 -0.326749 -0.5256973 -0.7568048  
## 657 -0.045747 -6.042e-01 -0.847446 0.057815 -0.7772238 0.0964632  
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## 663 -0.760537 -1.128e+00 -0.725650 0.369846 -0.9725716 1.4475792  
## 664 -0.408308 -1.655e+00 -0.769247 0.001594 -1.0506324 0.7586873  
## 665 -1.024780 -9.614e-01 -0.988310 0.415938 -1.2062972 1.6522698  
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## 673 -0.253860 -1.065e+00 0.081711 -0.125221 -0.2682894 0.6866153  
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## 676 -0.738125 -1.175e+00 -0.660269 0.154139 -1.1762232 1.1362428  
## 677 0.269383 -1.339e+00 0.663008 -0.727951 0.0198396 -0.4404811  
## 678 0.278163 -9.917e-01 0.505559 -0.882135 0.7807672 0.0516521  
## 679 -0.166701 -1.267e+00 -0.002016 -0.139973 -0.8247514 0.0846787  
## 680 -0.703111 -1.236e+00 -0.779258 0.259097 -1.0923054 0.5586666  
## 681 -0.634084 -1.093e+00 -1.139444 0.460783 -1.6549800 -0.2077496  
## 682 0.385036 -1.215e+00 0.756913 -0.854001 -0.3490757 -0.5278348  
## 683 0.389496 -1.210e+00 0.892132 -0.832947 -0.3875445 -0.3137536  
## 684 -0.150546 -7.633e-01 0.358183 -0.289948 1.7864507 -0.5722879  
## 685 0.104660 -1.318e+00 0.562215 -0.993354 -0.4838836 -0.1965242  
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## 687 -0.186017 -1.156e+00 0.189620 -0.181068 -0.7263877 -0.1976986  
## 688 -1.095407 -8.893e-01 -0.514941 0.335395 -0.6733680 0.9209264  
## 689 -0.698515 -1.351e+00 -0.920662 1.006918 1.5699213 0.8647477  
## 690 -0.540706 -7.389e-01 0.061292 0.324661 -0.4721924 -0.2204196  
## 691 0.070278 -1.060e+00 0.508522 -0.488542 -0.4211184 0.4990513  
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## 694 -0.667397 -1.092e+00 -0.717542 0.318134 -0.8746762 0.6186127  
## 695 0.259286 -1.033e+00 0.799310 -0.199280 0.9465466 -0.5980671  
## 696 -0.098037 -1.194e+00 0.626638 -0.787931 0.2648941 -0.6338195  
## 697 -0.234713 -1.084e+00 0.062851 -0.362427 -0.4368747 0.2649742  
## 698 0.022977 -1.123e+00 -0.051776 -0.182393 -0.6116671 -0.5087350  
## 699 -0.666370 -1.172e+00 -0.461197 0.802676 0.5153693 -0.3517128  
## 700 -0.388728 -8.309e-01 0.051041 -0.079145 0.1932884 -0.2628033  
## 701 -0.327880 -7.222e-01 0.341914 -0.172562 -0.5450763 0.4535277  
## 702 0.361329 -1.063e+00 0.773611 -0.014701 -0.6052679 -0.3147149  
## 703 0.311625 -1.022e+00 0.467799 0.274632 -0.5915552 -0.0775746  
## 704 -0.465254 -9.336e-01 -0.264599 -0.169400 -0.7841775 0.4254819  
## 705 0.272543 -9.562e-01 0.771253 -0.524253 0.0485277 0.5982231  
## 706 -0.384652 -6.200e-01 0.664830 0.014970 -0.6758816 1.0468748  
## 707 -0.393686 -5.739e-01 0.594418 -0.006503 0.2694578 -0.1114413  
## 708 0.179692 -1.457e+00 0.509040 -0.432586 2.6394652 -1.6400390  
## 709 0.246385 -1.036e+00 0.825617 -0.168340 0.0298861 -0.5574374  
## 710 -0.230212 -6.485e-01 -0.090671 0.170302 1.1592569 -0.4999422  
## 711 -0.266610 -9.159e-01 0.218180 -0.520167 -0.6006893 -0.2336920  
## 712 -0.628539 -7.239e-01 -0.034340 0.026216 -0.9993888 -0.2198293  
## 713 -0.665212 -6.762e-01 0.151033 -0.099048 -0.5672053 -0.4247923  
## 714 -0.488744 -1.310e+00 -0.422521 0.260450 -0.4305915 0.2939410  
## 715 -0.521978 -1.300e+00 -0.654019 0.215032 -1.1725754 -0.5256654  
## 716 -0.229416 -8.027e-01 0.003964 -0.149257 -0.3734713 0.0009729  
## 717 0.130693 -1.273e+00 0.469821 -0.516180 0.6024937 -1.0702839  
## 718 -0.460988 -1.301e+00 -0.640803 0.182995 -0.9218103 -0.1496007  
## 719 -0.649271 -9.958e-01 -0.913710 0.690426 -0.5250336 -0.5167534  
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## 721 -0.474130 -1.224e+00 -0.297553 -0.232652 -1.1447254 0.0579261  
## 722 -0.638982 -1.208e+00 -0.607676 0.736678 1.0962171 0.3151340  
## 723 -0.307174 -1.139e+00 -0.160358 -0.443917 -0.6557247 0.7152834  
## 724 -0.460024 -1.009e+00 -0.684568 -0.008539 -0.6222459 1.1663951  
## 725 -0.816733 -6.506e-01 -0.565177 0.167200 -1.5677749 -0.0552282  
## 726 -0.737641 -8.349e-01 -0.866666 0.827617 -0.0099920 0.3852164  
## 727 -0.573151 -8.651e-01 -0.503118 0.254987 -0.6919088 -0.0248263  
## 728 -0.670915 -8.816e-01 -0.269500 -0.045243 -0.3503138 0.1935985  
## 729 -0.652307 -1.202e+00 -0.708747 0.288182 -1.1383722 0.6282185  
## 730 -0.691366 -1.206e+00 -0.595010 0.419895 -0.6883461 1.9989829  
## 731 -1.165465 -2.241e-01 -0.037914 0.381049 -0.7835059 1.8642168  
## 732 -0.829118 -3.493e-01 0.161303 -0.245191 -0.8157545 1.1380692  
## 733 -0.864790 -7.688e-01 -0.301473 0.204751 -0.6457004 1.0492221  
## 734 -0.839904 -6.503e-01 -0.025611 0.146518 -0.6060360 1.1569235  
## 735 -0.845754 -7.661e-01 -0.241081 0.208806 -0.6673129 1.4373769  
## 736 -0.541168 -1.585e+00 -0.185749 0.225163 0.1603380 5.0568539  
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## 738 -0.767565 -1.015e+00 -0.302173 0.096046 -0.5718326 1.4040494  
## 739 -0.177039 -1.232e+00 0.428184 -0.347708 -0.3819786 0.5669036  
## 740 -0.488670 -1.137e+00 0.116948 -0.220599 0.4255731 1.0270263  
## 741 -0.293857 -1.387e+00 -0.225644 0.260291 1.1765192 1.2856671  
## 742 -0.169981 -1.203e+00 0.636701 -0.332778 -0.0144769 0.4856075  
## 743 -0.142348 -1.494e+00 0.625215 -0.945344 -0.2721594 3.1923677  
## 744 -0.157932 -1.078e+00 0.462298 -0.017289 0.9481296 1.6239300  
## 745 0.050538 -1.166e+00 0.879306 -1.177398 -0.2737982 1.0940885  
## 746 -0.910730 -1.059e+00 -0.439679 0.822473 0.6797511 2.1372775  
## 747 0.244451 -1.195e+00 1.146587 -0.850519 -0.0013328 0.6503278  
## 748 -0.819756 -1.104e+00 -0.524559 0.316333 -0.3783180 1.2103315  
## 749 -0.177965 -1.016e+00 0.227959 -0.269964 -0.5017636 0.3801763  
## 750 -1.111851 -8.885e-01 -0.579455 0.638738 -0.1275482 2.0838993  
## 751 -1.170086 -5.944e-01 -0.198804 0.886186 0.7434917 1.9944376  
## 752 -0.784948 -1.351e+00 -0.441612 0.638279 0.0598156 3.4381752  
## 753 -0.959130 -1.499e+00 -0.425990 1.068708 1.0430097 5.2491620  
## 754 -1.074598 -9.911e-01 -0.670631 1.165009 1.0313296 2.9667613  
## 755 -0.827947 -1.316e+00 -0.993972 0.574443 -0.7617339 1.9934515  
## 756 -0.671424 -1.473e+00 -0.831982 0.700345 0.2467266 1.7326348  
## 757 -0.192286 -1.379e+00 0.574529 -0.637685 -0.0551893 0.8670131  
## 758 -0.884572 -1.017e+00 -0.611713 0.763810 1.1610268 1.8173549  
## 759 -0.313121 -1.102e+00 0.837354 -0.623124 0.3324164 0.8860390  
## 760 -0.738537 -1.099e+00 -0.535935 0.402914 -0.4442412 1.8087097  
## 761 -0.666584 -1.663e+00 -0.846399 0.551501 -0.7473447 0.8867855  
## 762 -0.207151 -1.582e+00 0.047823 0.450885 0.0601399 2.0898570  
## 763 -0.380960 -1.355e+00 0.192501 -0.099919 -0.4488739 2.2406798  
## 764 -0.512790 -1.103e+00 0.248767 0.354741 0.5890653 1.9778092  
## 765 -0.421369 -9.229e-01 0.073493 0.354179 0.6074720 0.4221708  
## 766 -0.223915 -7.007e-01 1.133082 -0.554039 0.1425124 0.7882619  
## 767 0.632343 -5.485e-01 0.423515 -0.811338 0.0188581 -0.6118147  
## 768 0.466500 -3.334e-01 0.541731 -0.332440 -0.2118939 -0.0467427  
## 769 0.802092 -1.175e-01 0.533113 -0.816629 0.5926855 0.9277593  
## 770 0.447367 -1.026e+00 0.968344 -0.562397 0.2404086 -0.2284806  
## 771 -0.490904 -8.191e-01 0.519318 0.092677 -0.0041440 -0.0270870  
## 772 0.559734 -5.959e-01 0.741658 -0.525707 0.2744833 -0.5725029  
## 773 0.028581 -1.032e+00 0.683778 -0.425615 1.0210322 1.3371385  
## 774 -0.210183 -8.750e-01 -0.021583 0.034886 -0.0731948 0.5965117  
## 775 0.651992 -7.678e-01 0.740037 -0.377785 0.1235209 -1.0745323  
## 776 0.738363 -6.107e-01 0.797368 -0.802346 0.2504520 -0.6884218  
## 777 0.513590 -6.236e-01 0.991174 -0.983649 -0.2180092 -0.1022645  
## 778 0.564920 -7.413e-01 0.725984 -0.469511 -0.1246800 -0.6810198  
## 779 0.707517 -6.912e-01 1.024055 -0.666186 0.2245263 -0.4986254  
## 780 0.585827 -6.426e-01 0.303830 0.033114 1.2356493 -0.8190506  
## 781 0.305369 -6.113e-01 0.714820 -0.786048 0.7134841 -0.7382112  
## 782 0.354087 -7.646e-01 0.687738 -1.027662 -0.3350116 -0.4773674  
## 783 0.315948 -6.609e-01 0.439741 -1.064405 0.4532901 -0.4459533  
## 784 0.286127 -9.354e-01 0.429098 -0.845101 -0.1964955 -0.9329177  
## 785 0.435184 -1.014e+00 0.614052 -0.468868 -0.2817138 -0.8487144  
## 786 0.492705 -4.691e-01 0.762564 -1.502749 -0.0639248 -0.4200337  
## 787 0.630371 -9.960e-01 0.898261 -1.405698 1.3944732 -0.8460667  
## 788 0.238315 -1.173e+00 0.368958 -0.616336 -0.2465433 -0.5984714  
## 789 -0.326956 1.245e-01 0.621462 -0.445729 -0.2864362 1.1685974  
## 790 -0.272255 1.287e-01 0.654011 -0.495696 0.6114547 0.0977730  
## 791 -0.044309 -2.462e-01 0.535955 -0.617909 0.2578403 0.0709941  
## 792 0.356303 -1.440e+00 0.663294 -1.014966 0.1356018 -0.8482037  
## 793 -0.070250 -8.599e-01 0.483242 -0.382144 0.0348250 0.2517725  
## 794 -0.197960 -5.276e-02 0.499519 -0.677744 0.3739781 -0.2532832  
## 795 -0.153358 -3.039e-01 0.353996 -0.016461 0.2568372 0.5745053  
## 796 -0.280949 3.497e-01 0.589475 -0.774949 -0.2273542 0.1005300  
## 797 0.071974 -2.503e-01 0.326437 -0.620469 -0.1792901 0.3327829  
## 798 -0.203909 3.279e-03 0.695790 -0.696382 0.0778831 0.0772179  
## 799 -0.435347 2.280e-01 0.810318 -0.609309 -0.3213906 0.4748171  
## 800 -0.423206 3.150e-01 1.170469 -0.472831 0.3191469 0.2172195  
## 801 -0.120033 -9.142e-02 0.375948 -0.406254 -0.4715887 0.0951962  
## 802 -0.023646 5.855e-02 0.779872 -0.534918 -0.4065667 0.2521052  
## 803 -0.115988 -6.633e-01 0.130881 -0.594855 -0.0057771 0.3107511  
## 804 -0.243944 -1.609e-01 0.119910 -0.469008 0.0408648 0.6625288  
## 805 -0.427711 4.170e-02 0.639722 -0.459041 -0.1481791 0.1455941  
## 806 -0.702700 1.185e-01 0.692359 -0.146993 -0.0732006 0.7470071  
## 807 0.053564 -7.948e-01 0.158756 -0.579195 -0.2250152 0.0940661  
## 808 0.472201 -8.376e-01 0.699948 -0.761720 -0.2503734 -0.9585778  
## 809 -0.090108 -8.263e-01 0.651458 0.242014 -0.1686368 -0.4352584  
## 810 -0.035860 -8.958e-01 0.216218 -0.568416 -0.0195725 -0.0685039  
## 811 -0.011137 -8.528e-01 -0.052601 -0.387503 -0.7150789 0.0416449  
## 812 0.177303 -7.345e-01 0.160319 0.034693 -0.4738378 -0.2809828  
## 813 -0.179275 -6.006e-01 0.104096 -0.301307 -0.0367711 -0.0187350  
## 814 0.130746 -7.387e-01 -0.062949 -0.649142 -0.3848737 -0.5954916  
## 815 0.262496 -1.062e+00 -0.068377 -0.627956 -0.3320931 -0.6609464  
## 816 -0.249204 -8.955e-01 -0.143270 -0.154479 -0.7947158 -0.2227983  
## 817 -0.047299 -5.665e-01 0.032771 -0.330560 -0.1101755 0.1913301  
## 818 -0.091053 -8.849e-01 0.367920 -0.741302 0.1457261 -0.2318752  
## 819 -0.022126 -6.246e-01 0.055548 -0.396906 -0.0645071 0.0032791  
## 820 -0.168631 -5.000e-01 -0.138876 -0.206722 0.0385897 0.5813263  
## 821 0.331616 -5.621e-01 -0.355877 -0.710550 -0.5028434 -0.7151432  
## 822 -0.083364 -7.924e-01 -0.797374 -0.168002 -0.3754666 -0.3617114  
## 823 -0.171493 -9.661e-01 -0.794455 -0.181654 -0.6444235 -0.5281155  
## 824 -0.233435 -5.549e-01 -0.046240 0.011697 -0.4413786 0.0429994  
## 825 -0.360743 -5.659e-01 -0.085450 -0.269725 -0.0373090 0.3567534  
## 826 -0.511148 -3.201e-01 0.697973 -0.466181 0.0258290 -0.0270116  
## 827 0.011749 -7.522e-01 -0.288280 -0.417266 -0.6234178 -0.3303384  
## 828 -0.048015 -5.534e-01 -0.055602 -0.647135 0.0888215 0.1566233  
## 829 -0.324143 -1.891e-01 -0.788289 -0.490212 -0.2397449 0.9104538  
## 830 0.165863 -7.509e-01 0.258724 -0.808596 -0.2627258 -0.5338350  
## 831 -0.151699 -6.934e-01 -0.470748 -0.146187 -0.7993501 0.0333506

25% variance explained

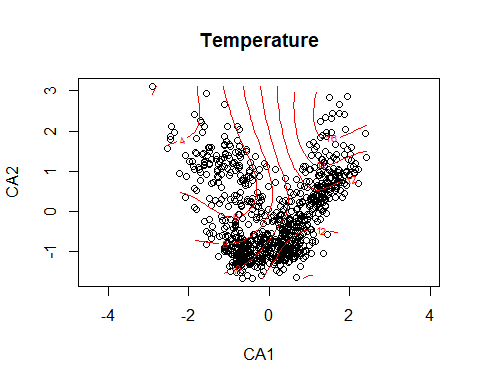
Tri-Plotting:

arctic\_pollen\_tempfit <- envfit(arctic\_pollen\_cca\_combo,arctic.env$tjul)  
arctic\_pollen\_precipfit <- envfit(arctic\_pollen\_cca\_combo,arctic.env$annp)  
arctic\_pollen\_sunfit <- envfit(arctic\_pollen\_cca\_combo,arctic.env$sjul)  
  
plot(arctic\_pollen\_cca\_combo)  
plot(arctic\_pollen\_tempfit,add=TRUE,labels="Temperature")  
plot(arctic\_pollen\_precipfit,add=TRUE,labels="Precipitation")  
plot(arctic\_pollen\_sunfit,add=TRUE,labels="Sunshine")

 There’s an arch effect. Sunshine is positively correlating with Precipitation and Temperature, which are not correlated with each other.

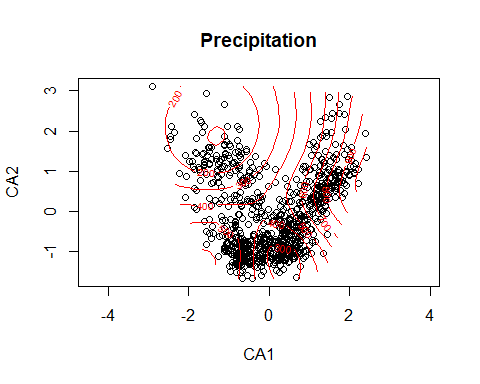
Ordination surfaces:

#Temperature  
ordisurf(x=arctic\_pollen\_cca\_combo,arctic.env$tjul,main="Temperature")



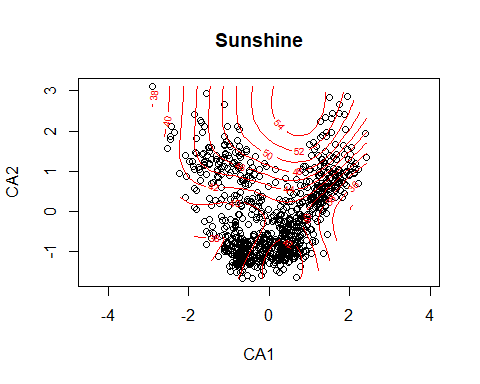
##   
## Family: gaussian   
## Link function: identity   
##   
## Formula:  
## y ~ s(x1, x2, k = 10, bs = "tp", fx = FALSE)  
##   
## Estimated degrees of freedom:  
## 8.84 total = 9.84   
##   
## REML score: 1699.243

#Precipitation  
ordisurf(x=arctic\_pollen\_cca\_combo,arctic.env$annp,main="Precipitation")



##   
## Family: gaussian   
## Link function: identity   
##   
## Formula:  
## y ~ s(x1, x2, k = 10, bs = "tp", fx = FALSE)  
##   
## Estimated degrees of freedom:  
## 8.31 total = 9.31   
##   
## REML score: 5811.181

#Sunshine  
ordisurf(x=arctic\_pollen\_cca\_combo,arctic.env$sjul,main="Sunshine")

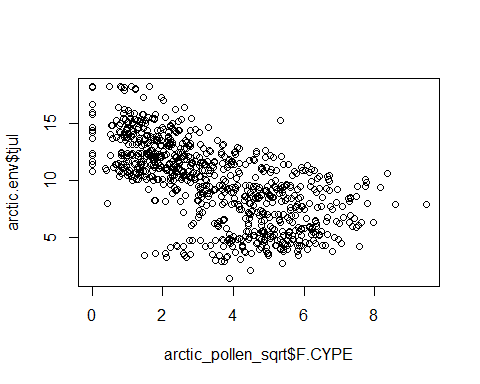


##   
## Family: gaussian   
## Link function: identity   
##   
## Formula:  
## y ~ s(x1, x2, k = 10, bs = "tp", fx = FALSE)  
##   
## Estimated degrees of freedom:  
## 8.14 total = 9.14   
##   
## REML score: 2423.26

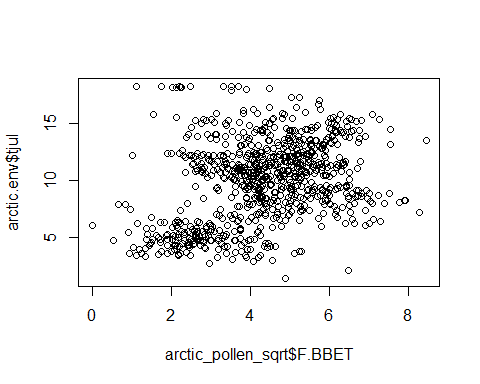
## Exercise 3

Plotting taxa abundances

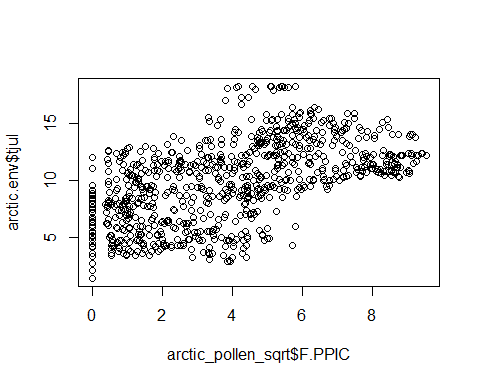
plot(arctic\_pollen\_sqrt$F.CYPE,arctic.env$tjul)



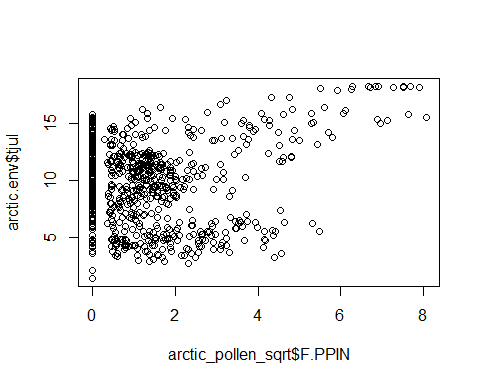
plot(arctic\_pollen\_sqrt$F.BBET,arctic.env$tjul)



plot(arctic\_pollen\_sqrt$F.PPIC,arctic.env$tjul)



plot(arctic\_pollen\_sqrt$F.PPIN,arctic.env$tjul)



Optima estimates

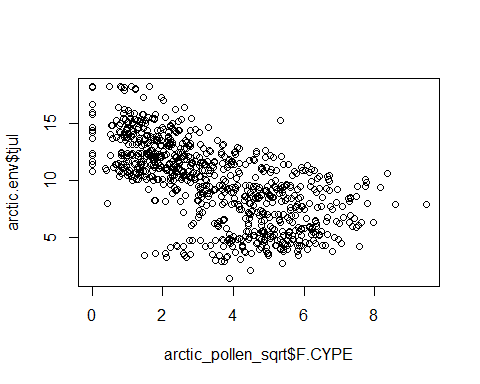
cype\_opt <- analogue::optima(arctic\_pollen\_sqrt$F.CYPE,arctic.env$tjul)  
bbet\_opt <- analogue::optima(arctic\_pollen\_sqrt$F.BBET,arctic.env$tjul)  
ppic\_opt <- analogue::optima(arctic\_pollen\_sqrt$F.PPIC,arctic.env$tjul)  
ppin\_opt <- analogue::optima(arctic\_pollen\_sqrt$F.PPIN,arctic.env$tjul)

Tolerance estimates

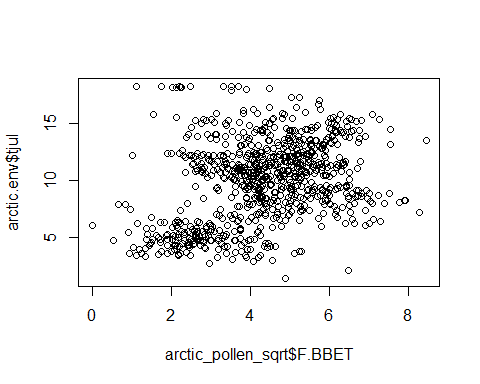
cype\_tol <- tolerance(arctic\_pollen\_sqrt$F.CYPE,arctic.env$tjul)  
bbet\_tol <- tolerance(arctic\_pollen\_sqrt$F.BBET,arctic.env$tjul)  
ppic\_tol <- tolerance(arctic\_pollen\_sqrt$F.PPIC,arctic.env$tjul)  
ppin\_tol <- tolerance(arctic\_pollen\_sqrt$F.PPIN,arctic.env$tjul)

Adding dnorm

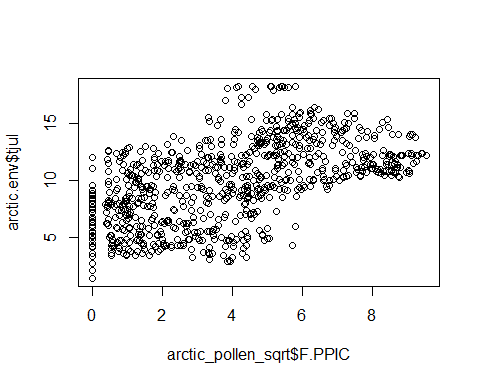
#CYPE  
cype\_dnorm <- dnorm(arctic.env$tjul,cype\_opt,cype\_tol)  
plot(arctic\_pollen\_sqrt$F.CYPE,arctic.env$tjul)  
lines(arctic.env$tjul,cype\_dnorm)



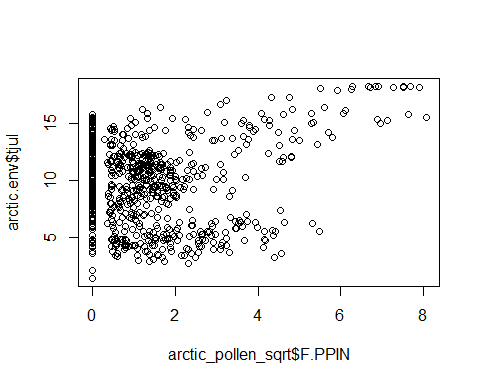
#BBET  
plot(arctic\_pollen\_sqrt$F.BBET,arctic.env$tjul)  
lines(arctic.env$tjul,dnorm(arctic.env$tjul,bbet\_opt,bbet\_tol))



#PPIC  
plot(arctic\_pollen\_sqrt$F.PPIC,arctic.env$tjul)  
lines(arctic.env$tjul,dnorm(arctic.env$tjul,ppic\_opt,ppic\_tol))



#PPIN  
plot(arctic\_pollen\_sqrt$F.PPIN,arctic.env$tjul)  
lines(arctic.env$tjul,dnorm(arctic.env$tjul,ppin\_opt,ppin\_tol))



Estimating for all taxa

arctic\_pollen\_wa <- rioja::WA(y=arctic\_pollen\_sqrt,x=arctic.env$tjul)  
summary(arctic\_pollen\_wa)

##   
## Method : Weighted Averaging  
## Call : rioja::WA(y = arctic\_pollen\_sqrt, x = arctic.env$tjul)   
##   
## Tolerance DW : No   
## Monotonic deshrink : No   
## No. samples : 828   
## No. species : 39   
## Cross val. : none   
##   
## Deshrinking regression coefficients:  
## Inverse d/s Classical d/s  
## wa.b0 -29.6874 8.1298  
## wa.b1 4.1067 0.1526  
##   
## Performance:  
## RMSE R2 Avg.Bias Max.Bias Skill  
## WA.inv 2.1638 0.6268 0 5.1059 62.6822  
## WA.cla 2.7331 0.6268 0 3.3543 40.4652  
##   
##   
## Fitted values  
## WA.inv WA.cla  
## 1 9.716231 9.599130  
## 2 8.292863 7.328364  
## 3 8.351207 7.421443  
## . . .  
## . . .  
## 831 9.525978 9.295611  
##   
## Species coefficients  
## Optima  
## F.PABI 12.307671  
## F.BALN 10.490190  
## F.CAMB 9.389703  
## . .  
## . .  
## F.ULMA 12.812432

#arctic\_pollen\_sqrt\_cca <- cca(arctic\_pollen\_sqrt)  
#summary(arctic\_pollen\_sqrt-cca)

predict(arctic\_pollen\_wa)

## WA.inv WA.cla  
## 1 9.7162306 9.5991303  
## 2 8.2928634 7.3283640  
## 3 8.3512072 7.4214427  
## 4 10.0435996 10.1213979  
## 5 9.0174996 8.4844111  
## 6 8.8173428 8.1650912  
## 7 8.9163621 8.3230614  
## 8 7.5215050 6.0977787  
## 9 8.7654760 8.0823456  
## 10 7.7179116 6.4111156  
## 11 6.9420219 5.1733014  
## 12 7.7633500 6.4836056  
## 13 7.3274469 5.7881883  
## 14 7.3369046 5.8032768  
## 15 8.6557357 7.9072716  
## 16 7.2944050 5.7354750  
## 17 5.9117225 3.5296149  
## 18 8.0958495 7.0140581  
## 19 8.7477535 8.0540721  
## 20 6.2943531 4.1400440  
## 21 7.8314265 6.5922114  
## 22 7.2925559 5.7325250  
## 23 6.0978458 3.8265465  
## 24 7.1365608 5.4836586  
## 25 6.5100174 4.4841037  
## 26 7.7815408 6.5126264  
## 27 6.1213494 3.8640429  
## 28 7.0795954 5.3927789  
## 29 7.0659377 5.3709902  
## 30 7.3796492 5.8714693  
## 31 7.8340488 6.5963948  
## 32 6.6047695 4.6352664  
## 33 6.3429849 4.2176287  
## 34 7.4242340 5.9425976  
## 35 7.0616843 5.3642045  
## 36 5.9228280 3.5473320  
## 37 5.9934593 3.6600136  
## 38 7.8165848 6.5685336  
## 39 7.4734030 6.0210393  
## 40 6.8159766 4.9722152  
## 41 8.5893059 7.8012929  
## 42 5.0130729 2.0959559  
## 43 5.6081699 3.0453429  
## 44 5.9385234 3.5723717  
## 45 5.4033047 2.7185115  
## 46 3.9553352 0.4084960  
## 47 4.0979263 0.6359784  
## 48 4.2574778 0.8905186  
## 49 8.0114897 6.8794749  
## 50 5.6977518 3.1882571  
## 51 4.5238719 1.3155099  
## 52 3.7929528 0.1494394  
## 53 3.7777782 0.1252307  
## 54 5.4073755 2.7250059  
## 55 4.3533938 1.0435380  
## 56 4.6830858 1.5695116  
## 57 4.8518002 1.8386699  
## 58 4.0359187 0.5370547  
## 59 4.5350344 1.3333180  
## 60 6.0465130 3.7446528  
## 61 5.1878285 2.3747519  
## 62 5.3252005 2.5939082  
## 63 5.5158433 2.8980497  
## 64 3.1400605 -0.8921512  
## 65 3.6252845 -0.1180499  
## 66 6.1531235 3.9147337  
## 67 4.1439241 0.7093609  
## 68 5.2426913 2.4622772  
## 69 3.8802209 0.2886625  
## 70 7.1038115 5.4314121  
## 71 6.2456660 4.0623712  
## 72 5.9242947 3.5496721  
## 73 6.7260573 4.8287625  
## 74 5.9005727 3.5118271  
## 75 6.8122181 4.9662191  
## 76 5.5868415 3.0113166  
## 77 7.9534735 6.7869189  
## 78 6.7461035 4.8607433  
## 79 7.4884577 6.0450568  
## 80 6.6396320 4.6908842  
## 81 5.9183193 3.5401391  
## 82 5.5285018 2.9182444  
## 83 5.9404930 3.5755140  
## 84 6.8479193 5.0231749  
## 85 3.6520790 -0.0753033  
## 86 6.5558161 4.5571686  
## 87 6.7994955 4.9459221  
## 88 7.4093739 5.9188905  
## 89 8.3298514 7.3873727  
## 90 7.8558442 6.6311661  
## 91 3.9510446 0.4016509  
## 92 3.2717626 -0.6820404  
## 93 7.7339932 6.4367714  
## 94 6.8690947 5.0569570  
## 95 6.8927880 5.0947561  
## 96 6.5078562 4.4806558  
## 97 3.8309644 0.2100811  
## 98 5.8994906 3.5101009  
## 99 5.8493834 3.4301625  
## 100 5.6299308 3.0800590  
## 101 4.2044388 0.8059030  
## 102 5.5073322 2.8844717  
## 103 5.8450770 3.4232922  
## 104 4.1603041 0.7354926  
## 105 3.9576013 0.4121111  
## 106 0.1862069 -5.6045763  
## 107 2.0697768 -2.5996263  
## 108 1.9452315 -2.7983195  
## 109 3.5937715 -0.1683240  
## 110 2.0884207 -2.5698829  
## 111 4.3096049 0.9736795  
## 112 3.2792242 -0.6701366  
## 113 2.0503249 -2.6306590  
## 114 3.7760094 0.1224089  
## 115 8.8000722 8.1375386  
## 116 10.2805628 10.4994366  
## 117 11.0701007 11.7590247  
## 118 7.0184749 5.2952704  
## 119 8.4021232 7.5026713  
## 120 7.9230347 6.7383584  
## 121 7.7469922 6.4575093  
## 122 8.2467849 7.2548527  
## 123 8.2654219 7.2845852  
## 124 8.4346406 7.5545479  
## 125 8.1448366 7.0922096  
## 126 8.1839050 7.1545373  
## 127 8.1946316 7.1716500  
## 128 6.5884518 4.6092339  
## 129 7.9949012 6.8530105  
## 131 7.5378131 6.1237958  
## 132 8.0300042 6.9090120  
## 133 8.2991375 7.3383733  
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## 672 9.5330385 9.3068751  
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## 676 8.1018152 7.0235756  
## 677 11.1021554 11.8101629  
## 678 10.7268539 11.2114263  
## 679 9.7323466 9.6248409  
## 680 8.1687742 7.1303985  
## 681 8.1330842 7.0734605  
## 682 11.2207935 11.9994321  
## 683 11.2662349 12.0719269  
## 684 9.5543405 9.3408593  
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## 687 9.6447449 9.4850858  
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## 690 8.4466514 7.5737094  
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## 696 10.0083209 10.0651160  
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## 698 10.1831202 10.3439818  
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## 701 8.9038392 8.3030831  
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## 704 8.5263008 7.7007779  
## 705 10.8551834 11.4161567  
## 706 8.6761920 7.9399065  
## 707 8.6697600 7.9296453  
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## 709 10.7413337 11.2345268  
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## 768 11.0857371 11.7839701  
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## 770 11.4659724 12.3905778  
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## 775 11.8681122 13.0321309  
## 776 12.0714733 13.3565627  
## 777 11.4358011 12.3424440  
## 778 11.5988394 12.6025470  
## 779 12.0689901 13.3526011  
## 780 11.5592917 12.5394546  
## 781 10.9468134 11.5623384  
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## 800 8.2649559 7.2838418  
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## 814 10.3711461 10.6439486  
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## 816 9.3171633 8.9624789  
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## 821 10.8220014 11.3632199  
## 822 9.8465675 9.8070630  
## 823 9.5389781 9.3163509  
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## 825 8.9502076 8.3770569  
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## 827 9.9953452 10.0444153  
## 828 9.8677823 9.8409080  
## 829 8.9118958 8.3159362  
## 830 10.5759663 10.9707082  
## 831 9.5259776 9.2956105

arctic\_pollen\_crossval <- rioja::crossval(arctic\_pollen\_wa)

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arctic\_pollen\_perf <- rioja::performance(arctic\_pollen\_crossval)  
summary(arctic\_pollen\_crossval)

##   
## Method : Weighted Averaging  
## Call : rioja::WA(y = arctic\_pollen\_sqrt, x = arctic.env$tjul)   
##   
## Tolerance DW : No   
## Monotonic deshrink : No   
## No. samples : 828   
## No. species : 39   
## Cross val. : loo   
##   
## Deshrinking regression coefficients:  
## Inverse d/s Classical d/s  
## wa.b0 -29.6874 8.1298  
## wa.b1 4.1067 0.1526  
##   
## Performance:  
## RMSE R2 Avg.Bias Max.Bias Skill  
## WA.inv 2.1638 0.6268 0.0000 5.1059 62.6822  
## WA.cla 2.7331 0.6268 0.0000 3.3543 40.4652  
## WA.inv\_XVal 2.1798 0.6213 0.0014 5.1973 62.1314  
## WA.cla\_XVal 2.7454 0.6220 0.0034 3.4976 39.9255  
##   
##   
## Fitted values  
## WA.inv WA.cla  
## 1 9.716231 9.599130  
## 2 8.292863 7.328364  
## 3 8.351207 7.421443  
## . . .  
## . . .  
## 828 9.525978 9.295611  
##   
## Species coefficients  
## Optima  
## F.PABI 12.307671  
## F.BALN 10.490190  
## F.CAMB 9.389703  
## . .  
## . .  
## F.ULMA 12.812432

summary(arctic\_pollen\_perf)

## Length Class Mode   
## RMSE0 1 -none- numeric  
## object 10 -none- numeric  
## crossval 10 -none- numeric