Model for Prediction

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```r
setwd("~/Desktop/Spr2017-proj5-grp3/data/")
data.filtered <- read.csv('NAreplaced.csv')#4242 2271
train.prediction <- read.csv('train.csv')
gpa <- train.prediction$gpa
data.filtered <- cbind(gpa,data.filtered)
data.filtered <- data.filtered[,-2]
# select rows with gpa data
data.filtered <- subset(data.filtered,!is.na(data.filtered$gpa))# 2330*2271

# create training and test data set
set.seed(123)
train.index <- sample(1:nrow(data.filtered),2000,replace = F)
train <- data.filtered[train.index,] #2000*2271
test <- data.filtered[-train.index,] #330*2271
```

Model 1: Multiple linear regression

```r
# train model
lin.reg <- lm(gpa~.,data = train)
summary(lin.reg) #Multiple R-squared:0.7906
```

```
##
## Call:
## lm(formula = gpa ~ ., data = train)
##
## Residuals:
##    Min     1Q Median     3Q    Max
## -1.617  0.000  0.000  0.000  1.286
##
## Coefficients: (1103 not defined because of singularities)
##                          Estimate Std. Error t value Pr(>|t|)
## (Intercept)              5.877e+12  4.404e+12   1.335 0.182720
## ED.continuous.challengeID -2.985e-04  2.999e-05  -9.956  < 2e-16 ***
## k5conf6                  5.368e+09  9.041e+10   0.059 0.952680
## k5conf9                  1.173e+11  2.516e+11   0.466 0.641307
## k5conf10                -1.423e+11  1.971e+11  -0.722 0.470907
## k5a1a                    4.038e+09  6.132e+09   0.659 0.510559
## k5a1b                   -1.783e+08  8.417e+09  -0.021 0.983106
## k5a1c                   -2.544e+09  4.650e+09  -0.547 0.584622
## k5a1d                   -3.925e+09  4.257e+09  -0.922 0.357052
## k5a1e                    7.254e+09  6.078e+09   1.194 0.233339
## k5a2a                   -4.478e+09  4.635e+09  -0.966 0.334583
## k5a2b                    3.254e+09  3.328e+09   0.978 0.328717
## k5a2c                   -1.270e+10  1.374e+10  -0.924 0.355770
## k5a2d                   -1.220e+10  1.173e+10  -1.040 0.298820
## k5a2e                   -1.418e+09  3.586e+09  -0.396 0.692668
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```
## k5a2f                        3.506e+09  4.186e+09    0.838 0.402750
## k5a3a                        8.028e+09  8.132e+09    0.987 0.324086
## k5a3b                       -5.115e+09  6.148e+09   -0.832 0.405874
## k5a3c                       -1.021e+10  7.136e+09   -1.431 0.153049
## k5a3d                        5.466e+09  5.821e+09    0.939 0.348349
## k5a3e                       -7.265e+09  6.947e+09   -1.046 0.296281
## k5a3f                       -3.243e+09  3.264e+09   -0.993 0.321095
## k5a4a                        1.081e+10  1.436e+10    0.753 0.452177
## k5a4b                        1.322e+10  1.573e+10    0.840 0.401123
## k5a4c                       -3.562e+10  2.183e+10   -1.632 0.103428
## k5a4d                        8.030e+09  7.727e+09    1.039 0.299312
## k5a4e                       -5.666e+09  7.109e+09   -0.797 0.425870
## k5a4f                        1.878e+09  2.496e+09    0.752 0.452315
## k5b1a                        3.127e+09  8.554e+09    0.366 0.714911
## k5b1b                       -6.703e+09  6.071e+09   -1.104 0.270189
## k5b1c                       -7.796e+08  2.884e+09   -0.270 0.787041
## k5b1d                        4.477e+09  2.787e+09    1.606 0.108954
## k5b2a                       -2.094e+09  3.609e+09   -0.580 0.562090
## k5b2b                        2.520e+09  7.702e+09    0.327 0.743726
## k5b2c                        1.025e+10  6.732e+09    1.522 0.128660
## k5b2d                        7.242e+09  9.141e+09    0.792 0.428648
## k5b3a                       -3.598e+09  1.176e+10   -0.306 0.759758
## k5b3b                       -2.915e+10  1.985e+10   -1.469 0.142688
## k5b3c                       -2.463e+10  1.315e+10   -1.873 0.061722 .
## k5b3d                        1.002e+10  1.861e+10    0.539 0.590450
## k5c0                        -3.322e+10  2.395e+10   -1.387 0.166162
## k5c1                        -5.664e+09  3.881e+09   -1.459 0.145192
## k5c1a                        2.747e+09  3.757e+09    0.731 0.465168
## k5c1b                       -1.293e+10  2.405e+10   -0.538 0.591127
## k5c2                        -4.135e+09  1.100e+10   -0.376 0.707063
## k5c3                         1.200e+09  1.262e+10    0.095 0.924292
## k5c3a                        5.613e+09  1.375e+10    0.408 0.683223
## k5c4                         2.493e+10  1.378e+10    1.810 0.071092 .
## k5c5                        -2.266e+10  1.275e+10   -1.777 0.076267 .
## k5c5a                        4.702e+10  2.953e+10    1.592 0.112138
## k5c6                         3.707e+10  2.532e+10    1.464 0.143862
## k5c7                        -2.670e+10  2.535e+10   -1.053 0.292832
## k5d1a                       -4.752e+08  5.613e+09   -0.085 0.932571
## k5d1b                       -7.677e+08  5.376e+09   -0.143 0.886516
## k5d1c                        6.862e+09  1.115e+10    0.615 0.538793
## k5d1d                       -4.797e+09  9.674e+09   -0.496 0.620287
## k5d1e                        5.110e+09  5.555e+09    0.920 0.358164
## k5d1f                       -2.681e+09  3.660e+09   -0.733 0.464245
## k5d1g                        5.091e+09  3.629e+09    1.403 0.161405
## k5d1h                       -3.086e+09  4.887e+09   -0.631 0.528100
## k5d2                         2.227e+09  3.976e+09    0.560 0.575651
## k5e1a                       -4.429e+09  1.155e+10   -0.383 0.701628
## k5e1b                       -3.678e+09  6.768e+09   -0.543 0.587088
## k5e1c                       -3.630e+08  1.503e+09   -0.242 0.809251
## k5e1d                        3.124e+08  4.045e+09    0.077 0.938481
## k5e2a                       -1.856e+09  5.598e+09   -0.332 0.740384
## k5e2b                       -2.909e+09  9.066e+09   -0.321 0.748444
## k5e2c                        2.270e+09  2.071e+10    0.110 0.912783
## k5e2d                        6.965e+07  8.125e+09    0.009 0.993165
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2

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## k5g1a                  4.835e+09  7.933e+09   0.610 0.542512
## k5g1b                 -2.989e+09  1.520e+10  -0.197 0.844266
## k5g1c                 -1.146e+10  6.948e+09  -1.649 0.099825 .
## k5g1d                  1.751e+10  1.734e+10   1.010 0.312942
## k5g1e                  5.889e+09  1.613e+10   0.365 0.715196
## k5g2a                  1.699e+09  3.684e+09   0.461 0.644860
## k5g2b                  4.020e+09  2.405e+09   1.672 0.095352 .
## k5g2c                  8.826e+09  5.153e+09   1.713 0.087495 .
## k5g2d                  5.324e+09  3.019e+09   1.764 0.078534 .
## k5g2e                 -6.195e+08  1.535e+10  -0.040 0.967821
## k5g2f                 -1.303e+10  7.053e+09  -1.848 0.065304 .
## k5g2g                  1.117e+10  1.274e+10   0.877 0.381004
## k5g2h                 -7.164e+09  7.469e+09  -0.959 0.338070
## k5g2i                  2.593e+09  7.022e+09   0.369 0.712124
## k5g2j                 -4.423e+09  3.370e+09  -1.312 0.190113
## k5g2k                 -9.374e+08  1.296e+10  -0.072 0.942380
## k5g2l                  6.947e+09  4.954e+09   1.402 0.161609
## k5g2m                  7.237e+09  4.556e+09   1.589 0.112928
## k5g2n                 -1.889e+09  2.091e+09  -0.903 0.366904
## k5h1                   2.001e+09  6.535e+09   0.306 0.759650
## k5h2                   6.159e+09  6.889e+09   0.894 0.371858
## m5a2                  -7.031e+10  9.358e+10  -0.751 0.452852
## m5a3e2                 2.940e+11  4.288e+11   0.686 0.493259
## m5a4                  -1.121e+10  1.148e+10  -0.977 0.329147
## m5a4b2                -7.858e+07  1.492e+08  -0.527 0.598596
## m5a4h2                -2.905e+07  2.858e+07  -1.016 0.310047
## m5a4j2                 3.053e+07  2.047e+07   1.491 0.136656
## m5a5                   5.780e+09  1.518e+10   0.381 0.703542
## m5a5c01a               2.141e+12  4.307e+12   0.497 0.619407
## m5a5c02a              -3.594e+09  5.710e+09  -0.629 0.529427
## m5a5c03a               1.502e+10  2.248e+10   0.668 0.504385
## m5a5c04a               3.172e+08  2.100e+10   0.015 0.987956
## m5a5c05a              -1.450e+09  1.479e+10  -0.098 0.921966
## m5a5c06a              -1.309e+10  1.409e+10  -0.929 0.353390
## m5a5c07a                      NA         NA      NA        NA
## m5a6                  -3.408e+10  2.249e+10  -1.515 0.130506
## m5a7                  -3.148e+10  2.422e+10  -1.300 0.194279
## m5a8                   1.435e+10  2.186e+10   0.656 0.511900
## m5a101                 2.838e+09  1.625e+09   1.746 0.081512 .
## m5a10a                -4.659e+09  1.886e+10  -0.247 0.805038
## m5a11a                -8.535e+09  5.805e+09  -1.470 0.142243
## m5a11b                 6.484e+09  8.249e+09   0.786 0.432317
## m5b2                   1.070e+10  1.979e+10   0.540 0.589153
## m5b2c1                -9.945e+09  6.620e+09  -1.502 0.133800
## m5b3                  -1.058e+09  1.725e+09  -0.614 0.539808
## m5b4                  -6.574e+09  2.536e+10  -0.259 0.795623
## m5b6a1                 8.311e+07  3.226e+08   0.258 0.796794
## m5b10a                -6.378e+09  6.958e+09  -0.917 0.359905
## m5b12b                 4.299e+09  4.904e+09   0.877 0.381201
## m5b16a                -6.070e+08  2.452e+09  -0.247 0.804647
## m5b16b                -2.457e+09  8.070e+09  -0.305 0.760891
## m5b16d                -1.069e+10  1.033e+10  -1.035 0.301087
## m5b17b                -8.141e+07  1.022e+09  -0.080 0.936577
## m5b17c                -9.766e+09  9.802e+09  -0.996 0.319669
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## m5b18a          1.192e+09  8.710e+09   0.137 0.891185
## m5b18b         -4.758e+08  6.091e+08  -0.781 0.435228
## m5b21b          2.037e+09  1.410e+09   1.445 0.149100
## m5b22a          2.882e+08  3.070e+10   0.009 0.992515
## m5b22b          2.423e+10  1.876e+10   1.291 0.197268
## m5b22c         -2.409e+09  1.346e+10  -0.179 0.858031
## m5b22d         -3.955e+09  1.461e+10  -0.271 0.786752
## m5b22e          7.747e+09  1.088e+10   0.712 0.476997
## m5b22f         -5.151e+08  8.695e+09  -0.059 0.952787
## m5b22g          9.370e+09  1.031e+10   0.909 0.363780
## m5b22h         -2.343e+10  2.417e+10  -0.969 0.332925
## m5b22i          5.909e+08  4.918e+09   0.120 0.904414
## m5b24a          2.376e+09  2.766e+09   0.859 0.390860
## m5b28a         -4.707e+08  1.212e+09  -0.388 0.698031
## m5b31a          4.907e+09  3.018e+09   1.626 0.104675
## m5c1            3.158e+09  1.988e+09   1.589 0.112920
## m5d2            5.252e+09  1.861e+10   0.282 0.777934
## m5d5            1.321e+08  9.063e+08   0.146 0.884172
## m5d6            3.052e+09  2.201e+09   1.387 0.166255
## m5d7           -1.711e+09  2.562e+09  -0.668 0.504537
## m5d8           -1.262e+10  2.379e+10  -0.530 0.596184
## m5d9            3.456e+10  3.469e+10   0.996 0.319770
## m5d11a          3.992e+09  2.328e+09   1.715 0.087148 .
## m5d11b          2.712e+09  1.962e+09   1.382 0.167705
## m5d11d          1.866e+09  2.449e+09   0.762 0.446661
## m5d13b         -9.976e+09  7.434e+09  -1.342 0.180376
## m5d13c         -2.376e+11  1.728e+11  -1.375 0.169921
## m5d13d         -3.314e+10  2.371e+10  -1.398 0.162982
## m5d13e          2.485e+11  1.753e+11   1.417 0.157093
## m5d13f          3.843e+09  1.263e+10   0.304 0.761083
## m5d18a         -3.978e+10  2.914e+10  -1.365 0.172901
## m5d18b         -4.551e+09  1.275e+10  -0.357 0.721244
## m5d18c          1.844e+10  1.858e+10   0.993 0.321524
## m5d18d          1.327e+10  1.245e+10   1.066 0.287088
## m5d19a         -1.019e+09  7.524e+09  -0.135 0.892360
## m5d19b          1.411e+10  2.339e+10   0.603 0.546644
## m5d19c         -5.552e+09  6.231e+10  -0.089 0.929039
## m5d19d         -1.871e+10  3.111e+10  -0.601 0.547875
## m5d19e         -4.003e+10  4.275e+10  -0.936 0.349601
## m5d19f          2.030e+10  1.524e+10   1.332 0.183567
## m5e1e1         -1.474e+10  9.779e+09  -1.507 0.132576
## m5e1f1                 NA         NA      NA       NA
## m5e2           -2.875e+11  2.793e+11  -1.030 0.303791
## m5e3            2.170e+10  1.294e+10   1.676 0.094417 .
## m5e4           -2.805e+10  1.903e+10  -1.474 0.141335
## m5e5            1.184e+10  1.937e+10   0.611 0.541413
## m5e6            1.998e+09  3.368e+09   0.593 0.553309
## m5e7            3.107e+09  6.974e+09   0.445 0.656229
## m5f1           -7.406e+09  1.455e+10  -0.509 0.610949
## m5f2           -6.740e+08  1.386e+09  -0.486 0.626957
## m5f5           -2.872e+09  7.154e+09  -0.401 0.688329
## m5f6            1.009e+09  4.459e+09   0.226 0.821049
## m5f8a1         -8.464e+10  9.199e+10  -0.920 0.358047
## m5f8b1         -4.353e+09  3.917e+09  -1.111 0.266997
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## m5f8a2                        5.219e+10  5.895e+10   0.885 0.376498
## m5f8b2                        1.712e+09  3.985e+09   0.430 0.667775
## m5f8a3                        2.904e+10  3.871e+10   0.750 0.453619
## m5f8b3                        7.408e+08  2.627e+09   0.282 0.778119
## m5f11a                       -4.172e+09  4.544e+09  -0.918 0.359154
## m5f13a                       -1.447e+07  1.625e+07  -0.891 0.373539
## m5f14b                       -4.388e+08  1.447e+09  -0.303 0.761929
## m5f18a                       -1.651e+07  3.712e+09  -0.004 0.996454
## m5f18b                       -1.597e+09  1.907e+09  -0.837 0.402968
## m5f18c                        4.652e+08  3.575e+08   1.301 0.193885
## m5f18d                       -2.838e+10  3.188e+10  -0.890 0.373807
## m5f18e                       -1.136e+09  8.799e+08  -1.291 0.197502
## m5f18f                       -2.904e+09  2.045e+09  -1.420 0.156238
## m5f20a                       -3.060e+09  8.140e+09  -0.376 0.707157
## m5f20b                        3.295e+08  2.359e+09   0.140 0.888970
## m5f23a                       -1.282e+10  2.775e+10  -0.462 0.644289
## m5f23b                        3.025e+10  8.700e+10   0.348 0.728257
## m5f23c                        2.116e+09  8.248e+09   0.257 0.797649
## m5f23d                       -3.724e+10  3.599e+10  -1.035 0.301351
## m5f23e                        8.835e+08  6.865e+09   0.129 0.897657
## m5f23f                        5.564e+10  3.980e+10   1.398 0.162901
## m5f23g                       -1.473e+10  2.705e+10  -0.544 0.586452
## m5f23h                        2.037e+10  1.599e+10   1.274 0.203467
## m5f23i                       -1.383e+11  1.032e+11  -1.341 0.180690
## m5f23j                        1.512e+10  1.468e+10   1.030 0.303545
## m5f23k                       -2.397e+10  1.552e+10  -1.544 0.123250
## m5f26a                       -1.119e+10  9.898e+09  -1.130 0.258920
## m5f27a                       -2.963e+11  2.891e+11  -1.025 0.306054
## m5f28b                        2.477e+11  2.446e+11   1.013 0.311731
## m5f28c                       -2.157e+11  5.496e+11  -0.393 0.694850
## m5f28e                        2.857e+11  6.320e+11   0.452 0.651500
## m5f28f                       -5.154e+09  1.625e+10  -0.317 0.751295
## m5g0                         -6.973e+09  5.312e+09  -1.313 0.190058
## m5g1                         -4.661e+09  1.323e+10  -0.352 0.724863
## m5g2                         -5.447e+09  4.313e+10  -0.126 0.899548
## m5g3                         -4.099e+09  7.161e+09  -0.572 0.567346
## m5g4                          1.592e+09  5.560e+09   0.286 0.774704
## m5g5                         -3.497e+09  5.925e+09  -0.590 0.555365
## m5g6                         -8.646e+08  5.769e+09  -0.150 0.880936
## m5g7                         -1.044e+09  6.395e+09  -0.163 0.870340
## m5g8                          1.401e+08  7.557e+09   0.019 0.985213
## m5g9                          4.644e+09  9.803e+09   0.474 0.635983
## m5g12a                       -2.233e+09  3.633e+09  -0.615 0.539109
## m5g16a                       -2.324e+09  1.360e+10  -0.171 0.864444
## m5g16b                       -1.131e+10  6.920e+09  -1.634 0.102996
## m5g16c                       -4.832e+09  3.751e+09  -1.288 0.198377
## m5g16d                        1.517e+10  9.901e+09   1.532 0.126342
## m5g16e                       -5.698e+09  8.859e+09  -0.643 0.520430
## m5g19a                       -1.096e+09  2.193e+09  -0.500 0.617393
## m5g22k                        1.313e+09  3.944e+09   0.333 0.739450
## m5g25a                        3.791e+09  8.512e+09   0.445 0.656334
## m5g27a                       -6.610e+09  1.048e+10  -0.631 0.528444
## m5h1                         -6.813e+09  1.195e+10  -0.570 0.568838
## m5h2                          6.008e+09  6.991e+09   0.859 0.390574
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5

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## m5h3                -3.010e+09 1.209e+10 -0.249 0.803499
## m5i1                 3.811e+10 1.347e+11  0.283 0.777361
## m5i3                 3.313e+11 2.702e+11  1.226 0.220963
## m5i3a1              -1.252e+09 5.366e+09 -0.233 0.815627
## m5i3a2              -1.711e+10 1.047e+10 -1.633 0.103142
## m5i4                -2.352e+10 3.423e+11 -0.069 0.945241
## m5i5                 2.459e+08 3.964e+10  0.006 0.995054
## m5i6                 5.231e+09 3.831e+09  1.365 0.172917
## m5i8                -3.414e+09 2.558e+09 -1.334 0.182791
## m5i9                -7.948e+07 4.992e+09 -0.016 0.987304
## m5i13p               9.876e+08 8.507e+08  1.161 0.246318
## m5i14c              -4.370e+09 5.148e+09 -0.849 0.396458
## m5i14f               3.480e+09 1.041e+10  0.334 0.738337
## m5i16a               1.157e+10 6.735e+09  1.719 0.086445 .
## m5i16b              -1.448e+10 8.051e+09 -1.799 0.072824 .
## m5i16c              -3.231e+09 4.280e+09 -0.755 0.450678
## m5i24a              -3.359e+10 2.832e+11 -0.119 0.905618
## m5i24d              -7.025e+09 3.942e+10 -0.178 0.858623
## m5i26a               2.802e+11 6.018e+11  0.466 0.641774
## m5i26d               3.579e+10 8.796e+10  0.407 0.684306
## m5j2                 2.435e+10 1.790e+10  1.361 0.174396
## m5j4                 7.202e+09 2.619e+10  0.275 0.783455
## m5j5                -1.150e+10 1.215e+10 -0.947 0.344309
## m5j5c1              -1.094e+10 1.196e+10 -0.915 0.360776
## m5j6                 5.491e+09 8.666e+09  0.634 0.526692
## m5j7                -4.032e+10 2.800e+10 -1.440 0.150673
## m5j8                 7.314e+09 8.884e+09  0.823 0.410814
## m5j9                 3.325e+09 2.054e+10  0.162 0.871469
## m5k1                 4.247e+12 1.577e+12  2.694 0.007354 **
## m5k2                -5.572e+12 3.030e+12 -1.839 0.066657 .
## m5k6                -3.352e+12 2.758e+12 -1.215 0.224953
## m5k7                -5.641e+11 2.383e+11 -2.367 0.018370 *
## m5k8                 5.202e+11 1.203e+12  0.432 0.665690
## m5k9                 6.336e+12 2.683e+12  2.362 0.018638 *
## m5k13a              -7.928e+12 4.406e+12 -1.799 0.072676 .
## m5k13b              -1.296e+13 5.876e+12 -2.205 0.027994 *
## m5k13c               2.057e+13 8.316e+12  2.473 0.013787 *
## m5k14a               4.460e+12 1.849e+12  2.413 0.016258 *
## m5k14b              -4.356e+12 1.281e+12 -3.401 0.000737 ***
## m5k14c              -6.858e+11 1.907e+12 -0.360 0.719276
## m5k14d               1.825e+12 1.154e+12  1.581 0.114716
## m5k14e              -4.101e+11 1.205e+12 -0.340 0.733762
## m5k14f              -9.281e+12 3.544e+12 -2.619 0.009151 **
## m5k14g               7.020e+12 3.085e+12  2.276 0.023362 *
## m5k14h               5.213e+12 2.571e+12  2.028 0.043194 *
## m5k14i              -9.401e+12 3.425e+12 -2.745 0.006311 **
## m5k14j               4.426e+12 2.098e+12  2.109 0.035512 *
## m5k15a               1.517e+11 1.790e+11  0.847 0.397257
## m5k17a               3.587e+12 1.011e+12  3.547 0.000433 ***
## m5k17b              -1.183e+12 7.943e+11 -1.489 0.137183
## m5k17c               8.268e+12 4.180e+12  1.978 0.048585 *
## m5k17d               2.910e+12 1.504e+12  1.935 0.053684 .
## m5k17f              -3.949e+12 1.393e+12 -2.836 0.004798 **
## m5k17g              -1.318e+12 2.878e+12 -0.458 0.647316
```

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## m5k17h                   -5.043e+11  8.278e+11  -0.609 0.542776
## m5k17i                    7.266e+12  5.012e+12   1.450 0.147929
## m5k17j                   -1.795e+13  6.596e+12  -2.721 0.006775 **
## m5k17k                    3.184e+12  2.324e+12   1.370 0.171456
## m5k17l                    1.294e+11  1.415e+12   0.091 0.927182
## m5a3a1_1                 -1.225e+11  5.023e+11  -0.244 0.807419
## m5a3a1_2                  3.640e+11  1.793e+12   0.203 0.839251
## m5a3a1_3                 -6.454e+11  1.286e+12  -0.502 0.616015
## m5a3a1_4                 -3.694e+12  3.194e+12  -1.156 0.248145
## m5a3a1_5                 -5.215e+12  4.661e+12  -1.119 0.263803
## m5a3a1_6                  1.741e+12  1.134e+13   0.154 0.878003
## m5a3a1_7                 -8.411e+12  6.029e+12  -1.395 0.163734
## m5a3a1_8                 -4.366e+11  1.452e+12  -0.301 0.763737
## m5a3a1_9                  1.660e+13  6.696e+12   2.480 0.013550 *
## m5a3i_10                 -8.711e+11  1.671e+12  -0.521 0.602507
## m5a3i_11                 -1.184e+13  1.441e+13  -0.821 0.411964
## m5a3i_12                  1.271e+13  1.409e+13   0.902 0.367517
## m5a3i_91                         NA         NA      NA       NA
## m5hhsize                 -4.990e+09  3.772e+09  -1.323 0.186548
## m5a6g01_10               -5.119e+11  4.133e+11  -1.238 0.216251
## m5a6g01_11                5.154e+11  4.353e+11   1.184 0.237088
## m5a6g01_12                       NA         NA      NA       NA
## m5a6g01_91               -1.018e+10  4.468e+10  -0.228 0.819974
## m5a6g02_10               -1.588e+13  6.643e+12  -2.391 0.017253 *
## m5a6g02_11                1.172e+13  1.426e+13   0.822 0.411785
## m5a6g02_12                4.106e+13  2.000e+13   2.053 0.040693 *
## m5a6g02_91               -1.701e+13  1.622e+13  -1.048 0.295151
## m5a6g03_10                       NA         NA      NA       NA
## m5a6g03_11                       NA         NA      NA       NA
## m5a6g03_12                1.331e+12  1.237e+13   0.108 0.914386
## m5a6g03_91               -2.121e+13  1.276e+13  -1.663 0.097142 .
## cm5adult                  4.973e+09  1.009e+10   0.493 0.622478
## m5b6a2_1                 -5.677e+13  3.652e+13  -1.555 0.120810
## m5b6a2_2                         NA         NA      NA       NA
## m5b6a2_3                  3.797e+13  2.249e+13   1.689 0.092047 .
## m5b6a2_4                  1.613e+13  1.260e+13   1.281 0.201083
## m5b8c_91                 -6.801e+08  1.110e+10  -0.061 0.951159
## m5b11a_1                  5.996e+09  5.103e+11   0.012 0.990632
## m5b11a_2                 -1.074e+11  7.432e+10  -1.446 0.149040
## m5b11a_3                  1.183e+11  4.700e+11   0.252 0.801401
## m5b17d_1                 -1.642e+10  4.355e+10  -0.377 0.706378
## m5b17d_2                 -6.894e+10  1.168e+11  -0.590 0.555473
## m5b17d_3                  2.042e+10  4.490e+10   0.455 0.649529
## m5b17d_4                  3.840e+10  1.473e+11   0.261 0.794474
## m5b17d_5                 -1.944e+11  1.329e+11  -1.462 0.144433
## m5b17d_6                  2.213e+11  1.236e+11   1.790 0.074136 .
## m5b17d_7                 -2.056e+10  3.873e+10  -0.531 0.595815
## m5b17d_8                  2.673e+10  2.123e+10   1.260 0.208543
## m5d2f_flag               -3.019e+09  4.987e+09  -0.605 0.545245
## m5e2a_91                 -4.689e+10  4.467e+10  -1.050 0.294444
## m5e8_0                    1.332e+10  2.208e+10   0.603 0.546821
## m5e8_1                   -1.171e+10  2.019e+10  -0.580 0.562352
## m5e8_2                   -8.345e+09  2.165e+10  -0.385 0.700148
## m5e8_3                    3.766e+10  2.312e+10   1.629 0.104072
```

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## m5e8_4                      -6.142e+09  1.555e+10  -0.395 0.693160
## m5e8_5                      -3.333e+10  2.165e+10  -1.540 0.124333
## m5e8_6                      -1.424e+10  2.069e+10  -0.688 0.491740
## m5e8_7                       7.370e+10  4.644e+10   1.587 0.113275
## m5e9_0                       3.605e+10  7.232e+10   0.499 0.618376
## m5e9_1                      -1.607e+10  1.145e+10  -1.403 0.161232
## m5e9_2                       4.917e+09  2.652e+10   0.185 0.853007
## m5e9_3                      -1.747e+10  1.532e+10  -1.140 0.254763
## m5e9_4                      -6.602e+08  8.525e+09  -0.077 0.938309
## m5e9_5                       9.478e+09  2.295e+10   0.413 0.679858
## m5e9_6                      -1.953e+10  2.216e+10  -0.881 0.378668
## m5e9_7                      -4.984e+10  2.732e+10  -1.824 0.068797 .
## m5f16a_1                     5.500e+10  3.500e+10   1.571 0.116920
## m5f16a_2                    -3.808e+10  5.179e+10  -0.735 0.462578
## m5f16a_3                    -1.317e+10  1.130e+11  -0.117 0.907225
## m5f16a_4                     6.293e+09  9.180e+10   0.069 0.945378
## m5f16a_5                    -1.478e+10  3.753e+10  -0.394 0.693939
## m5i2_1                      -2.101e+11  1.696e+11  -1.239 0.216158
## m5i2_2                      -8.857e+10  6.466e+10  -1.370 0.171446
## m5i2_3                      -1.014e+11  8.066e+10  -1.257 0.209475
## m5i2_4                       3.211e+10  2.367e+10   1.356 0.175756
## m5i2_5                      -2.607e+09  8.976e+10  -0.029 0.976841
## m5i2_6                       4.109e+11  2.884e+11   1.425 0.155037
## m5i2_7                      -3.794e+10  5.607e+10  -0.677 0.498962
## m5i2_8                             NA         NA      NA       NA
## m5i2_9                       2.331e+09  2.069e+10   0.113 0.910360
## m5i3a_10                     2.518e+10  2.681e+10   0.939 0.348242
## m5i3a_11                     2.495e+11  2.612e+11   0.956 0.339866
## m5i3a_12                    -8.716e+10  9.928e+10  -0.878 0.380499
## m5i3a_13                    -1.306e+10  2.451e+10  -0.533 0.594433
## m5i3a_14                    -6.274e+10  5.492e+10  -1.142 0.253963
## m5i3a_15                    -6.538e+10  5.111e+10  -1.279 0.201559
## m5i3a_16                     1.405e+10  1.125e+11   0.125 0.900667
## m5i24g_1                     4.287e+10  2.452e+11   0.175 0.861301
## m5i24g_2                     2.199e+11  1.555e+11   1.414 0.158064
## m5i24g_3                    -2.472e+11  3.340e+11  -0.740 0.459636
## m5i24g_4                           NA         NA      NA       NA
## m5i26g_1                     1.973e+13  9.012e+12   2.189 0.029124 *
## m5i26g_2                    -1.978e+13  8.941e+12  -2.213 0.027464 *
## m5i26g_3                    -3.498e+11  5.279e+11  -0.663 0.507937
## m5i26g_4                     3.938e+11  2.926e+11   1.346 0.179040
## m5a3a1_101                  -2.431e+11  7.583e+11  -0.321 0.748741
## m5a3a1_102                  -8.359e+11  1.520e+12  -0.550 0.582745
## m5a3a1_103                  -4.153e+10  4.692e+11  -0.089 0.929503
## m5a3a1_104                   5.881e+11  6.349e+11   0.926 0.354833
## m5a3a1_105                   2.050e+11  2.318e+11   0.884 0.377143
## m5a3a1_106                  -2.246e+11  5.972e+11  -0.376 0.707039
## m5b11a_101                  -7.353e+09  4.963e+09  -1.482 0.139206
## m5b11a_102                  -1.859e+10  1.106e+10  -1.680 0.093666 .
## m5b11a_104                   1.744e+10  9.785e+09   1.782 0.075453 .
## m5b11a_103                   7.385e+09  6.429e+09   1.149 0.251387
## m5b17d_101                  -1.392e+10  2.089e+10  -0.666 0.505514
## m5b17d_102                  -6.733e+09  1.636e+10  -0.412 0.680860
## m5b17d_103                  -1.825e+10  3.979e+10  -0.459 0.646766
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8

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## m5b17d_104             9.056e+09  9.308e+09   0.973 0.331159
## m5b17d_105            -4.878e+09  1.356e+10  -0.360 0.719270
## m5f7_101              -4.203e+09  4.840e+09  -0.869 0.385614
## m5f7_102               6.475e+08  2.319e+09   0.279 0.780252
## m5f7_103              -8.267e+09  4.413e+10  -0.187 0.851472
## m5f7_104              -4.046e+09  1.662e+10  -0.243 0.807750
## m5f7_105               1.501e+09  6.320e+09   0.237 0.812441
## m5f7_106              -1.250e+10  1.037e+10  -1.205 0.228829
## m5f7_107               6.706e+08  6.149e+09   0.109 0.913220
## m5f16a_101            -2.821e+10  3.065e+10  -0.921 0.357793
## m5i2_101               7.701e+09  1.075e+10   0.716 0.474303
## m5i2_102               4.318e+09  2.202e+10   0.196 0.844611
## m5i24g_101            -2.427e+10  2.339e+10  -1.037 0.300127
## f5a2a                  1.597e+09  5.253e+09   0.304 0.761347
## f5a2b                 -5.300e+10  2.641e+11  -0.201 0.841032
## f5a3a2                 1.726e+11  2.917e+11   0.592 0.554307
## f5a3b                 -1.420e+12  9.983e+11  -1.423 0.155622
## f5a3b1a               -4.008e+10  9.832e+10  -0.408 0.683738
## f5a3d                 -1.422e+10  2.298e+10  -0.619 0.536366
## f5a3f                  4.308e+09  8.614e+10   0.050 0.960137
## f5a4                   1.207e+10  7.026e+09   1.719 0.086438 .
## f5a4b2                -1.410e+08  4.136e+08  -0.341 0.733302
## f5a4c                  1.236e+11  6.383e+10   1.936 0.053549 .
## f5a4h2                 8.613e+06  2.144e+07   0.402 0.688043
## f5a4m                  9.052e+09  1.622e+10   0.558 0.577225
## f5a5                  -2.061e+11  1.439e+11  -1.432 0.152940
## f5a51                  3.891e+10  2.832e+10   1.374 0.170192
## f5a5b01                1.955e+10  1.968e+10   0.993 0.321046
## f5a5c01a              -5.393e+09  7.963e+09  -0.677 0.498658
## f5a5d01                1.086e+10  1.162e+10   0.935 0.350400
## f5a5e01                1.832e+10  1.080e+10   1.697 0.090464 .
## f5a5b02                5.814e+10  3.632e+10   1.601 0.110161
## f5a5c02a               1.212e+10  8.364e+09   1.450 0.147936
## f5a5e02                1.296e+10  9.082e+09   1.427 0.154334
## f5a5b03                6.774e+10  4.057e+10   1.670 0.095752 .
## f5a5c03a               8.611e+09  8.664e+09   0.994 0.320909
## f5a5e03                1.092e+10  1.730e+10   0.632 0.528041
## f5a5b04                4.826e+10  4.382e+10   1.101 0.271442
## f5a5d04                7.141e+09  7.113e+09   1.004 0.315930
## f5a5e04                1.480e+10  2.226e+10   0.665 0.506621
## f5a5b05                1.085e+11  6.241e+10   1.738 0.082910 .
## f5a5c05a              -2.186e+12  6.623e+12  -0.330 0.741550
## f5a5d05               -2.175e+10  1.242e+10  -1.752 0.080582 .
## f5a5e05                3.527e+10  3.604e+10   0.979 0.328387
## f5a5b06                7.150e+10  6.330e+10   1.130 0.259291
## f5a5d06                4.313e+08  1.594e+10   0.027 0.978428
## f5a5e06                1.418e+10  1.701e+11   0.083 0.933581
## f5a5b07                1.116e+12  1.306e+12   0.855 0.393310
## f5a5c07               -5.109e+11  5.209e+11  -0.981 0.327283
## f5a5d07               -4.148e+11  9.704e+11  -0.427 0.669293
## f5a5e07                1.363e+12  1.078e+12   1.264 0.206925
## f5a5b08                2.327e+13  1.304e+13   1.784 0.075198 .
## f5a5c08               -5.538e+11  2.327e+12  -0.238 0.812039
## f5a5d08               -7.868e+12  3.890e+12  -2.023 0.043747 *
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## f5a5e08                     -1.418e+13  6.734e+12  -2.106 0.035836 *
## f5a5b09                     -1.894e+13  2.216e+13  -0.854 0.393323
## f5a5c09                      6.972e+11  2.464e+13   0.028 0.977437
## f5a5d09                      1.808e+13  2.101e+13   0.860 0.390070
## f5a5f                        8.760e+11  5.369e+11   1.632 0.103530
## f5a5h                       -1.350e+10  1.229e+10  -1.098 0.272955
## f5a5l                       -1.051e+10  1.008e+10  -1.043 0.297624
## f5a6                         8.231e+10  4.861e+10   1.693 0.091189 .
## f5a6a                        1.558e+09  2.295e+09   0.679 0.497650
## f5a6c07                      1.127e+09  2.443e+10   0.046 0.963236
## f5a6c08                      4.302e+10  1.785e+11   0.241 0.809705
## f5a6c09                      4.143e+10  9.505e+10   0.436 0.663120
## f5a6e                        6.893e+08  9.877e+08   0.698 0.485628
## f5a6f01                     -2.635e+06  4.579e+08  -0.006 0.995411
## f5a6f02                      2.325e+08  1.045e+09   0.222 0.824077
## f5a6f03                      2.962e+08  5.819e+09   0.051 0.959423
## f5a7                         2.358e+11  2.154e+11   1.095 0.274108
## f5a7a                        3.519e+10  3.197e+10   1.101 0.271736
## f5a8                         2.802e+10  2.913e+10   0.962 0.336700
## f5a8a                       -9.596e+09  7.090e+09  -1.353 0.176680
## f5a8a2                      -5.435e+10  3.988e+10  -1.363 0.173692
## f5a8b01                      7.966e+07  5.425e+08   0.147 0.883339
## f5a8f01                      1.740e+09  2.696e+09   0.646 0.518935
## f5a8b02                      1.712e+08  5.100e+08   0.336 0.737312
## f5a8f02                      1.185e+09  4.180e+09   0.283 0.776964
## f5a8b03                     -1.663e+08  4.497e+08  -0.370 0.711679
## f5a8f03                      8.095e+08  1.985e+09   0.408 0.683608
## f5a8b04                      3.797e+08  2.128e+08   1.784 0.075137 .
## f5a8f04                      2.279e+09  1.885e+09   1.209 0.227468
## f5a8b05                      8.241e+08  7.668e+08   1.075 0.283132
## f5a8f05                     -1.675e+08  4.499e+09  -0.037 0.970314
## f5a8b06                      3.184e+09  4.082e+09   0.780 0.435864
## f5a8f06                     -3.949e+08  1.419e+10  -0.028 0.977808
## f5a8b07                      2.880e+09  4.244e+09   0.679 0.497806
## f5a8f07                     -5.297e+09  2.611e+10  -0.203 0.839302
## f5a8b08                      5.646e+09  5.804e+09   0.973 0.331174
## f5a8f08                     -1.351e+10  3.391e+10  -0.399 0.690440
## f5a8b09                     -2.611e+10  5.421e+10  -0.482 0.630293
## f5a8f09                     -3.058e+11  2.693e+11  -1.136 0.256803
## f5a8b10                      2.780e+11  3.094e+11   0.899 0.369396
## f5a8f10                      8.411e+10  5.922e+10   1.420 0.156232
## f5a10                        1.371e+10  1.248e+10   1.099 0.272373
## f5a101                      -1.346e+10  1.126e+10  -1.196 0.232572
## f5a10a                      -3.219e+09  1.529e+10  -0.210 0.833429
## f5a11                        2.176e+09  1.459e+10   0.149 0.881453
## f5a11a                      -1.919e+10  7.794e+10  -0.246 0.805672
## f5a11b                       1.019e+10  7.529e+10   0.135 0.892362
## f5b2x                       -1.715e+13  1.392e+13  -1.232 0.218646
## f5b3x                       -1.051e+12  1.014e+12  -1.037 0.300556
## f5b5x                       -1.735e+12  1.546e+12  -1.122 0.262628
## f5b6x1                      -2.588e+12  6.197e+12  -0.418 0.676454
## f5b8x                        8.849e+09  2.052e+11   0.043 0.965625
## f5b10x                       5.934e+09  4.850e+10   0.122 0.902680
## f5b11x                      -1.001e+12  1.512e+12  -0.662 0.508333
```

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## f5b12x                 -4.719e+12  5.097e+12  -0.926 0.355010
## f5b13x                  2.320e+13  1.294e+13   1.793 0.073730 .
## f5b14x                  5.311e+09  8.012e+09   0.663 0.507764
## f5b16x                 -1.540e+09  1.470e+11  -0.010 0.991650
## f5b17x                  3.220e+11  2.768e+12   0.116 0.907456
## f5b18x                  1.267e+12  1.086e+12   1.167 0.244037
## f5b19x                  1.164e+12  2.901e+12   0.401 0.688424
## f5b20x                 -2.193e+12  1.335e+12  -1.643 0.101220
## f5b21x                  1.543e+12  9.039e+11   1.708 0.088467 .
## f5b22x                 -9.813e+11  1.198e+12  -0.819 0.413289
## f5b23x                  3.589e+11  2.854e+11   1.258 0.209234
## f5b24x                  4.091e+11  7.019e+11   0.583 0.560321
## f5b28x                 -5.395e+11  5.506e+11  -0.980 0.327737
## f5b28x1                 5.937e+11  4.797e+11   1.238 0.216557
## f5b31x                 -4.044e+11  4.080e+11  -0.991 0.322256
## f5b32x                  5.677e+11  3.410e+11   1.665 0.096658 .
## f5b2b                   3.175e+09  3.272e+10   0.097 0.922764
## f5b2c1                 -1.037e+09  9.914e+09  -0.105 0.916767
## f5b3                   -4.058e+09  1.785e+10  -0.227 0.820327
## f5b4                    2.546e+10  4.739e+10   0.537 0.591388
## f5b4a                   6.509e+10  7.768e+10   0.838 0.402559
## f5b6a                  -2.755e+09  6.448e+09  -0.427 0.669456
## f5b6a1                 -1.603e+09  1.674e+09  -0.958 0.338776
## f5b8a                  -4.339e+09  3.150e+09  -1.377 0.169148
## f5b8b                   3.631e+08  2.950e+08   1.231 0.219083
## f5b8d                   3.456e+10  2.795e+10   1.237 0.216958
## f5b10a                  6.469e+09  1.114e+10   0.581 0.561730
## f5b11                   5.378e+10  4.919e+10   1.093 0.274915
## f5b12b                  2.495e+09  3.480e+09   0.717 0.473719
## f5b14                   1.580e+09  7.931e+08   1.992 0.047069 *
## f5b15                   1.178e+10  9.387e+09   1.255 0.210208
## f5b16                  -2.071e+09  3.125e+10  -0.066 0.947210
## f5b16a                 -1.307e+10  7.355e+09  -1.776 0.076400 .
## f5b16b                  1.956e+09  2.098e+10   0.093 0.925762
## f5b16d                 -2.955e+09  1.525e+10  -0.194 0.846498
## f5b17                  -3.456e+10  1.758e+10  -1.966 0.049989 *
## f5b17b                 -1.759e+10  1.103e+10  -1.594 0.111603
## f5b17c                  1.238e+10  1.454e+10   0.851 0.395039
## f5b18a                 -1.110e+10  7.771e+09  -1.428 0.154021
## f5b18b                 -2.010e+09  1.084e+09  -1.854 0.064491 .
## f5b21                  -3.857e+09  2.149e+10  -0.179 0.857644
## f5b21b                  4.992e+08  4.834e+09   0.103 0.917804
## f5b22a                  3.872e+09  1.477e+10   0.262 0.793293
## f5b22b                 -3.193e+10  2.434e+10  -1.312 0.190270
## f5b22c                  1.676e+10  1.266e+10   1.323 0.186524
## f5b22d                  2.440e+10  3.610e+10   0.676 0.499497
## f5b22e                 -1.181e+10  1.252e+10  -0.943 0.346000
## f5b22f                  1.189e+10  1.330e+10   0.894 0.371927
## f5b22g                 -1.881e+10  2.000e+10  -0.941 0.347453
## f5b22h                 -1.133e+10  1.596e+10  -0.710 0.478235
## f5b22i                 -2.195e+10  1.421e+10  -1.544 0.123243
## f5b24                   7.197e+09  8.629e+09   0.834 0.404714
## f5b25a                  1.086e+10  8.026e+09   1.354 0.176630
## f5c1                   -4.206e+09  5.842e+09  -0.720 0.471943
```

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## f5c1a                    -1.971e+10  3.091e+10  -0.638 0.523949
## f5c1b                    -3.456e+10  4.232e+10  -0.817 0.414589
## f5c1c                    -6.482e+09  2.226e+10  -0.291 0.771005
## f5c1d                     1.194e+11  1.158e+11   1.032 0.302745
## f5c1e                    -5.578e+10  1.115e+11  -0.500 0.617144
## f5c1f                     3.791e+09  9.528e+09   0.398 0.690915
## f5c2a                     3.491e+10  2.236e+10   1.561 0.119188
## f5c2b                    -2.777e+09  1.218e+10  -0.228 0.819835
## f5c2c                    -2.135e+10  1.256e+10  -1.699 0.089975  .
## f5c2d                     1.754e+08  3.049e+10   0.006 0.995413
## f5c2e                    -1.715e+10  1.890e+10  -0.907 0.364806
## f5c3a                     1.661e+10  1.129e+10   1.471 0.142076
## f5c3b                     5.655e+09  1.270e+10   0.445 0.656359
## f5c3c                    -4.070e+09  1.981e+10  -0.205 0.837330
## f5c3d                    -2.392e+10  1.515e+10  -1.579 0.115040
## f5d2                      1.071e+11  1.476e+11   0.726 0.468137
## f5d2b                    -5.340e+11  9.553e+12  -0.056 0.955450
## f5d2c2                    1.694e+08  4.765e+09   0.036 0.971661
## f5d2d                     5.257e+11  6.562e+11   0.801 0.423497
## f5d2f                    -3.400e+11  2.929e+12  -0.116 0.907643
## f5d2f1                   -2.581e+10  2.916e+11  -0.088 0.929522
## f5d2h                     2.467e+11  4.055e+11   0.608 0.543268
## f5d4m                     1.529e+11  1.166e+11   1.312 0.190358
## f5d5                      1.250e+10  1.445e+10   0.865 0.387732
## f5d5a                    -4.270e+11  2.849e+11  -1.499 0.134683
## f5d5b                     9.495e+10  1.543e+11   0.615 0.538673
## f5d6                     -4.018e+10  3.578e+10  -1.123 0.262208
## f5d6b                     1.755e+10  6.237e+10   0.281 0.778569
## f5d7                     -3.140e+10  8.371e+10  -0.375 0.707768
## f5d7a                     4.524e+11  2.847e+11   1.589 0.112816
## f5d7c                    -2.004e+09  1.214e+09  -1.650 0.099646  .
## f5d8                     -1.437e+12  1.991e+12  -0.722 0.470884
## f5d9                     -2.311e+12  1.237e+12  -1.868 0.062480  .
## f5d10                     2.768e+12  8.601e+12   0.322 0.747741
## f5d11                     5.163e+12  4.715e+12   1.095 0.274142
## f5d11a                    9.609e+11  8.031e+11   1.196 0.232189
## f5d11b                   -6.316e+11  3.715e+11  -1.700 0.089842  .
## f5d11d                    2.816e+11  1.766e+11   1.595 0.111489
## f5d13                    -5.734e+11  4.093e+11  -1.401 0.161999
## f5d13b                    5.524e+11  3.362e+11   1.643 0.101114
## f5d13c                    9.732e+12  7.189e+12   1.354 0.176513
## f5d13d                    1.049e+12  8.825e+11   1.189 0.235156
## f5d13e                   -6.571e+12  6.525e+12  -1.007 0.314506
## f5d13f                   -3.505e+12  3.421e+12  -1.025 0.306157
## f5d21                    -2.650e+12  1.737e+12  -1.525 0.127947
## f5d22                           NA         NA      NA        NA
## f5d23                    -1.034e+12  1.652e+12  -0.626 0.531692
## f5e1a                    -4.237e+08  8.577e+08  -0.494 0.621610
## f5e1b                     1.486e+09  1.532e+09   0.970 0.332555
## f5e1d                     1.675e+10  2.403e+10   0.697 0.486044
## f5e1e                     3.565e+09  1.900e+10   0.188 0.851257
## f5e1e1                   -8.873e+08  6.792e+09  -0.131 0.896119
## f5e1f                     1.256e+09  2.337e+10   0.054 0.957175
## f5e1f1                   -8.182e+09  2.295e+10  -0.356 0.721654
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## f5e1g                          -1.034e+10  6.712e+09  -1.541 0.124164
## f5e1h                          -4.366e+09  2.828e+09  -1.544 0.123411
## f5e1i                           4.248e+09  9.059e+09   0.469 0.639402
## f5e1j                          -4.175e+09  7.791e+09  -0.536 0.592356
## f5e1k                          -2.088e+09  3.873e+09  -0.539 0.590161
## f5e2                           -6.781e+10  6.018e+11  -0.113 0.910335
## f5e2c                          -4.249e+09  7.286e+09  -0.583 0.560074
## f5e3                            4.518e+10  3.223e+10   1.402 0.161731
## f5e3a                           1.245e+10  7.487e+09   1.663 0.097132 .
## f5e4                           -3.778e+10  4.510e+10  -0.838 0.402615
## f5e5                           -1.085e+10  6.912e+09  -1.570 0.117244
## f5e6                            3.129e+10  2.334e+10   1.341 0.180645
## f5e6a                          -1.727e+09  2.979e+09  -0.580 0.562397
## f5e6b                           1.316e+10  1.141e+10   1.154 0.249293
## f5e7                            6.389e+09  1.419e+10   0.450 0.652728
## f5f1                            1.067e+11  7.824e+10   1.364 0.173452
## f5f1a                           8.292e+09  9.872e+09   0.840 0.401396
## f5f2                           -2.137e+09  1.917e+09  -1.115 0.265668
## f5f4a                          -5.577e+08  3.569e+08  -1.563 0.118875
## f5f4b                          -4.602e+09  1.243e+10  -0.370 0.711490
## f5f5                            1.173e+10  1.246e+10   0.941 0.347227
## f5f6                           -5.391e+09  1.001e+10  -0.539 0.590407
## f5f7a                           1.733e+10  1.638e+10   1.058 0.290534
## f5f7b                           4.605e+10  5.335e+10   0.863 0.388557
## f5f7c                           9.527e+10  2.508e+11   0.380 0.704266
## f5f8a1                         -1.503e+12  1.360e+12  -1.105 0.269687
## f5f8b1                         -9.097e+09  2.130e+10  -0.427 0.669586
## f5f8a2                          1.025e+12  6.685e+11   1.534 0.125896
## f5f8b2                         -8.003e+09  8.964e+09  -0.893 0.372475
## f5f8a3                         -9.878e+10  8.393e+10  -1.177 0.239893
## f5f8b3                         -9.916e+09  8.860e+09  -1.119 0.263671
## f5f10                          -3.634e+12  1.210e+13  -0.300 0.764145
## f5f11                          -5.264e+11  1.542e+12  -0.341 0.733055
## f5f11a                         -6.242e+10  1.208e+11  -0.517 0.605498
## f5f11b                          1.528e+10  6.210e+10   0.246 0.805773
## f5f12                           9.379e+10  9.709e+11   0.097 0.923091
## f5f13a                          1.005e+08  4.221e+08   0.238 0.811975
## f5f14                          -1.500e+10  1.337e+11  -0.112 0.910751
## f5f14a                         -5.455e+09  1.017e+10  -0.536 0.591963
## f5f14b                         -1.602e+09  2.466e+09  -0.650 0.516239
## f5f16                           3.611e+12  1.194e+13   0.302 0.762544
## f5f17                          -4.517e+12  5.820e+12  -0.776 0.438139
## f5f18                           4.093e+09  1.314e+10   0.311 0.755622
## f5f18a                         -1.743e+09  4.152e+09  -0.420 0.674865
## f5f18b                          7.274e+09  1.039e+10   0.700 0.484471
## f5f18c                         -2.873e+07  1.682e+09  -0.017 0.986380
## f5f18d                         -1.343e+10  6.547e+10  -0.205 0.837530
## f5f18e                         -4.085e+09  4.285e+09  -0.953 0.341011
## f5f18f                         -2.538e+09  2.916e+09  -0.870 0.384650
## f5f20                          -1.459e+11  9.696e+10  -1.505 0.133210
## f5f20a                         -9.881e+09  6.428e+09  -1.537 0.124978
## f5f20b                          2.424e+09  1.635e+09   1.482 0.139007
## f5f21                           3.507e+10  1.689e+10   2.077 0.038417 *
## f5f22                           1.544e+10  2.767e+10   0.558 0.577173
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## f5f23a                          -6.698e+10  6.345e+10  -1.056 0.291747
## f5f23b                           7.703e+10  7.876e+10   0.978 0.328626
## f5f23c                          -4.430e+10  3.045e+10  -1.455 0.146427
## f5f23d                          -7.909e+10  1.735e+11  -0.456 0.648660
## f5f23e                          -2.709e+09  2.368e+10  -0.114 0.908980
## f5f23f                          -7.932e+10  7.727e+10  -1.027 0.305254
## f5f23g                           6.151e+10  3.492e+10   1.762 0.078841 .
## f5f23h                          -9.311e+10  8.566e+10  -1.087 0.277731
## f5f23i                           1.348e+11  8.258e+10   1.632 0.103494
## f5f23j                           6.189e+10  3.540e+10   1.748 0.081162 .
## f5f23k                           5.157e+10  8.775e+10   0.588 0.557066
## f5f24                            2.123e+10  1.467e+10   1.447 0.148591
## f5f25                           -9.975e+09  9.766e+10  -0.102 0.918698
## f5f26                            1.558e+11  2.191e+11   0.711 0.477538
## f5f26a                           1.324e+10  1.854e+10   0.714 0.475589
## f5f27                           -2.104e+11  2.788e+11  -0.755 0.450956
## f5f27a                          -7.464e+08  1.963e+10  -0.038 0.969687
## f5f28b                          -3.223e+10  5.665e+10  -0.569 0.569717
## f5f28c                          -1.001e+11  1.579e+11  -0.634 0.526496
## f5f28e                           8.181e+10  1.630e+11   0.502 0.616030
## f5f28f1                          2.740e+10  2.260e+10   1.213 0.225982
## f5f28j1                         -7.187e+08  4.517e+09  -0.159 0.873648
## f5f29                            6.183e+10  5.952e+10   1.039 0.299477
## f5g0                            -2.507e+09  2.550e+10  -0.098 0.921723
## f5g1                             1.246e+10  1.372e+10   0.908 0.364371
## f5g2                             3.240e+10  3.116e+10   1.040 0.299097
## f5g2b                            2.475e+10  1.529e+10   1.619 0.106243
## f5g2c                           -1.834e+10  8.624e+10  -0.213 0.831693
## f5g2d                           -6.939e+09  1.534e+10  -0.452 0.651238
## f5g2d1                           5.004e+09  1.362e+10   0.367 0.713475
## f5g2e                            4.127e+09  1.188e+10   0.347 0.728498
## f5g3                            -1.077e+11  6.071e+10  -1.773 0.076887 .
## f5g4                            -3.358e+10  2.605e+10  -1.289 0.197997
## f5g5                            -1.626e+10  1.034e+10  -1.573 0.116458
## f5g6                             8.503e+10  6.416e+10   1.325 0.185809
## f5g7                             9.172e+10  6.263e+10   1.464 0.143828
## f5g8                             2.058e+10  2.056e+10   1.001 0.317543
## f5g9                             3.396e+09  2.251e+09   1.508 0.132274
## f5g10                           -1.569e+11  8.679e+10  -1.808 0.071320 .
## f5g11                            5.667e+10  4.160e+10   1.362 0.173938
## f5g12                            8.186e+10  1.597e+11   0.513 0.608466
## f5g12a                           3.604e+09  2.257e+10   0.160 0.873201
## f5g13                            8.730e+09  4.944e+10   0.177 0.859933
## f5g14                            6.656e+10  8.177e+10   0.814 0.416092
## f5g15                           -6.977e+10  4.886e+10  -1.428 0.154008
## f5g16a                          -2.219e+09  7.670e+09  -0.289 0.772522
## f5g16b                           1.420e+10  9.747e+09   1.456 0.146014
## f5g16c                           9.675e+09  1.094e+10   0.884 0.377158
## f5g16d                           1.755e+10  1.182e+10   1.485 0.138231
## f5g16e                          -2.307e+09  6.856e+09  -0.336 0.736698
## f5g17                            6.376e+10  6.513e+10   0.979 0.328165
## f5g18                            8.207e+09  8.101e+09   1.013 0.311572
## f5g19                            4.772e+09  2.029e+10   0.235 0.814206
## f5g19a                          -5.149e+09  3.398e+09  -1.515 0.130528
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## f5g20                        6.059e+09  4.183e+09   1.449 0.148181
## f5g22                        2.975e+08  2.238e+09   0.133 0.894310
## f5g23                       -1.195e+11  3.284e+11  -0.364 0.716235
## f5g24                        3.894e+10  3.105e+10   1.254 0.210579
## f5g25                        6.130e+10  1.908e+11   0.321 0.748138
## f5g25a                       3.424e+09  2.844e+10   0.120 0.904221
## f5g25b                       4.387e+09  7.983e+09   0.549 0.582966
## f5g25c                       3.286e+09  5.146e+09   0.639 0.523444
## f5g27                        4.537e+09  1.265e+10   0.359 0.720006
## f5g27a                       5.627e+09  2.955e+10   0.190 0.849072
## f5g28                       -3.426e+10  4.340e+10  -0.789 0.430324
## f5g29                       -2.200e+09  5.056e+10  -0.044 0.965309
## f5g30                        4.203e+10  3.056e+10   1.375 0.169778
## f5g31                       -2.084e+10  4.566e+10  -0.456 0.648273
## f5g32                       -7.944e+10  8.767e+10  -0.906 0.365400
## f5g33                       -1.913e+10  3.461e+10  -0.553 0.580894
## f5h1                        -9.080e+09  1.493e+10  -0.608 0.543522
## f5h2                        -3.917e+09  5.283e+09  -0.741 0.458851
## f5h3                         3.382e+09  9.716e+09   0.348 0.727918
## f5i1                        -7.956e+11  1.045e+12  -0.762 0.446729
## f5i2a                       -2.458e+10  2.960e+11  -0.083 0.933867
## f5i3                        -2.857e+11  1.046e+12  -0.273 0.784878
## f5i3a1                       4.192e+10  3.822e+11   0.110 0.912733
## f5i3a2                      -2.986e+11  2.251e+11  -1.326 0.185417
## f5i3b                        1.999e+10  2.222e+10   0.900 0.368796
## f5i3c                        3.040e+10  3.610e+10   0.842 0.400206
## f5i4                         2.449e+11  2.534e+11   0.967 0.334224
## f5i5                        -2.536e+09  3.010e+10  -0.084 0.932898
## f5i6                         5.042e+09  4.561e+09   1.106 0.269519
## f5i8                        -8.560e+08  4.131e+09  -0.207 0.835939
## f5i9                        -3.911e+10  2.327e+10  -1.680 0.093651 .
## f5i11                        2.813e+10  3.085e+10   0.912 0.362270
## f5i13p                       1.196e+09  7.096e+08   1.685 0.092700 .
## f5i14a1                     -4.460e+09  1.331e+10  -0.335 0.737649
## f5i14a2                      2.339e+10  2.411e+10   0.970 0.332661
## f5i14a3                     -5.979e+09  2.957e+10  -0.202 0.839842
## f5i14a4                     -5.453e+09  2.475e+10  -0.220 0.825753
## f5i14a5                     -1.141e+10  8.001e+09  -1.426 0.154499
## f5i14b1                      3.671e+10  2.144e+10   1.712 0.087598 .
## f5i14b2                     -7.717e+09  2.075e+10  -0.372 0.710207
## f5i14b3                      1.216e+10  1.509e+10   0.806 0.420538
## f5i14b4                     -3.359e+09  1.372e+10  -0.245 0.806798
## f5i14c                       1.579e+10  2.151e+10   0.734 0.463381
## f5i14f                       4.449e+09  1.048e+10   0.424 0.671432
## f5i16a                      -1.037e+10  2.390e+10  -0.434 0.664605
## f5i16b                       3.525e+09  9.516e+09   0.370 0.711259
## f5i16c                       2.403e+09  1.028e+10   0.234 0.815289
## f5i17                       -8.355e+09  1.090e+10  -0.767 0.443686
## f5i19                       -6.064e+09  8.502e+09  -0.713 0.476052
## f5i20                        2.630e+09  3.341e+09   0.787 0.431566
## f5i22                        7.498e+08  8.092e+09   0.093 0.926224
## f5i23                       -2.208e+09  8.186e+09  -0.270 0.787509
## f5i24a                       3.823e+11  2.704e+11   1.414 0.158158
## f5i24d                       5.266e+10  3.817e+10   1.380 0.168359
```

15

```
## f5i24e1              -7.355e+09  6.863e+09  -1.072 0.284501
## f5i26a               -5.571e+10  1.236e+11  -0.451 0.652297
## f5i26d               -1.061e+09  1.936e+10  -0.055 0.956331
## f5i26e1              -7.724e+09  7.584e+09  -1.018 0.309073
## f5j1a                -1.678e+09  1.146e+09  -1.465 0.143726
## f5j2                 -4.871e+10  2.726e+10  -1.787 0.074704 .
## f5j4                 -2.889e+10  3.001e+10  -0.963 0.336282
## f5j4a                -3.667e+09  2.826e+09  -1.298 0.195021
## f5j5                  2.643e+10  4.572e+10   0.578 0.563460
## f5j5a                 9.298e+08  5.053e+09   0.184 0.854089
## f5j5b                 6.645e+09  6.404e+09   1.038 0.300037
## f5j5c1               -2.431e+09  2.486e+09  -0.978 0.328693
## f5j5d                 1.464e+10  1.203e+10   1.217 0.224336
## f5j6                  1.676e+09  1.257e+10   0.133 0.893981
## f5j6a                 4.833e+09  8.199e+09   0.590 0.555833
## f5j6b                -6.699e+09  6.957e+09  -0.963 0.336187
## f5j6d                 1.440e+09  1.425e+10   0.101 0.919553
## f5j6f                 4.400e+09  1.626e+10   0.271 0.786834
## f5j6h                 8.562e+09  5.504e+10   0.156 0.876468
## f5j6i                 4.006e+08  9.425e+09   0.043 0.966115
## f5j7                  9.506e+10  8.529e+10   1.114 0.265710
## f5j8                 -2.485e+10  2.578e+10  -0.964 0.335684
## f5j9                 -3.718e+08  2.946e+10  -0.013 0.989938
## f5j9a                 1.776e+10  1.356e+10   1.310 0.190752
## f5j9b                -2.820e+09  9.893e+09  -0.285 0.775723
## f5j9d                 1.563e+10  4.701e+10   0.332 0.739774
## f5j9f                 1.201e+10  1.531e+10   0.784 0.433326
## f5j9h                -7.242e+09  6.328e+10  -0.114 0.908936
## f5j9i                -1.035e+10  2.013e+10  -0.514 0.607209
## f5k1                 -2.208e+09  3.336e+09  -0.662 0.508386
## f5k2                  1.856e+10  1.232e+10   1.507 0.132669
## f5k2a                 1.596e+10  9.217e+09   1.732 0.084043 .
## f5k2b                -2.594e+10  1.201e+10  -2.160 0.031379 *
## f5k2c                -5.793e+09  6.204e+09  -0.934 0.350981
## f5k2d                -1.907e+09  4.352e+09  -0.438 0.661453
## f5k3a                 8.501e+09  2.078e+10   0.409 0.682655
## f5k3b                -2.663e+10  1.735e+10  -1.535 0.125607
## f5k3c                -3.926e+09  6.164e+09  -0.637 0.524571
## f5k4a                 1.814e+10  1.197e+10   1.515 0.130493
## f5k4b                -7.533e+08  7.956e+09  -0.095 0.924604
## f5k4c                -3.337e+09  8.217e+09  -0.406 0.684838
## f5k4d                -1.206e+08  1.351e+10  -0.009 0.992883
## f5k4e                -6.291e+08  5.051e+09  -0.125 0.900935
## f5k4f                 5.926e+09  4.344e+09   1.364 0.173316
## f5k4g                 6.365e+09  6.140e+09   1.037 0.300532
## f5k4h                 1.214e+10  1.223e+10   0.993 0.321496
## f5k4i                 3.038e+10  1.906e+10   1.594 0.111781
## f5k4j                -1.627e+09  9.323e+09  -0.174 0.861566
## f5k5a                -1.624e+10  1.753e+10  -0.926 0.354768
## f5k5b                 1.656e+10  2.800e+10   0.591 0.554512
## f5k5c                 3.600e+10  2.117e+10   1.701 0.089712 .
## f5k5d                -8.883e+10  9.264e+10  -0.959 0.338184
## f5k5e                -4.266e+10  3.325e+10  -1.283 0.200304
## f5k5f                -4.628e+10  3.441e+10  -1.345 0.179345
```

```
## f5k5g              9.258e+10  5.227e+10   1.771 0.077251 .
## f5k5h              2.875e+10  2.175e+10   1.322 0.186878
## f5k6              -6.609e+09  9.553e+09  -0.692 0.489443
## f5k8              -4.357e+09  1.270e+10  -0.343 0.731658
## f5k8a              2.120e+09  5.989e+09   0.354 0.723473
## f5k9               2.333e+10  1.102e+11   0.212 0.832513
## f5k9a             -5.300e+09  1.932e+10  -0.274 0.783933
## f5k13a             3.928e+08  1.147e+10   0.034 0.972696
## f5k13b            -2.621e+10  1.639e+10  -1.600 0.110427
## f5k13c             1.083e+09  2.243e+10   0.048 0.961531
## f5k14a             3.211e+09  4.010e+09   0.801 0.423790
## f5k14b            -1.142e+10  6.934e+09  -1.647 0.100285
## f5k14c             8.137e+09  9.861e+09   0.825 0.409711
## f5k14d             8.975e+09  1.732e+10   0.518 0.604613
## f5k14e             6.214e+09  1.193e+10   0.521 0.602773
## f5k14f            -8.322e+08  4.027e+09  -0.207 0.836383
## f5k14g             5.648e+09  4.032e+09   1.401 0.162091
## f5k14h            -4.845e+09  1.665e+10  -0.291 0.771168
## f5k14i             1.657e+09  1.091e+10   0.152 0.879354
## f5k14j             1.120e+09  6.709e+09   0.167 0.867534
## f5k15              2.115e+10  1.654e+10   1.279 0.201524
## f5k17a            -1.736e+10  2.416e+10  -0.718 0.472871
## f5k17b             4.428e+10  2.509e+10   1.765 0.078295 .
## f5k17c             1.853e+10  1.848e+10   1.003 0.316557
## f5k17d             1.355e+09  1.113e+10   0.122 0.903108
## f5k17e             6.776e+10  3.453e+10   1.962 0.050424 .
## f5k17f             7.050e+09  4.308e+10   0.164 0.870085
## f5k17g            -2.714e+10  1.616e+10  -1.679 0.093918 .
## f5k17h             8.872e+09  2.291e+10   0.387 0.698786
## f5k17i            -5.805e+10  4.091e+10  -1.419 0.156669
## f5k17j             1.732e+10  2.287e+10   0.758 0.449157
## f5k17k             3.988e+10  2.405e+10   1.658 0.098049 .
## f5k17l            -3.945e+10  2.117e+10  -1.864 0.063037 .
## f5k17m            -4.094e+10  4.412e+10  -0.928 0.353984
## f5k19             -2.609e+10  1.976e+10  -1.321 0.187376
## f5cs              -2.861e-03  9.102e-03  -0.314 0.753402
## f5a3a1_1          -8.232e+09  4.639e+10  -0.177 0.859242
## f5a3a1_2          -1.687e+10  1.387e+11  -0.122 0.903235
## f5a3a1_3           6.447e+10  8.880e+10   0.726 0.468291
## f5a3a1_4           5.380e+12  6.320e+12   0.851 0.395098
## f5a3a1_5           3.923e+11  2.109e+11   1.860 0.063588 .
## f5a3a1_6          -5.943e+12  6.364e+12  -0.934 0.350881
## f5a3a1_7           3.005e+10  8.561e+10   0.351 0.725789
## f5a3a1_8          -2.472e+11  1.586e+11  -1.558 0.119950
## f5a3a1_9           7.327e+10  2.087e+11   0.351 0.725742
## f5a3a1_10                 NA         NA      NA       NA
## f5a3a1_11          6.876e+10  2.044e+11   0.336 0.736746
## f5a3a1_12          1.467e+11  1.958e+11   0.749 0.454123
## f5a3a1_13         -5.337e+10  6.453e+10  -0.827 0.408743
## f5a3a1_91          1.123e+11  1.101e+11   1.020 0.308241
## f5a3i_1           -3.725e+11  1.639e+12  -0.227 0.820326
## f5a3i_2           -2.585e+12  3.320e+12  -0.779 0.436630
## f5a3i_3            1.234e+12  1.105e+12   1.117 0.264548
## f5a3i_4           -7.920e+11  6.774e+12  -0.117 0.906983
```

```
## f5a3i_5                                 NA        NA       NA        NA
## f5a3i_6                                 NA        NA       NA        NA
## f5a3i_7                                 NA        NA       NA        NA
## f5a3i_8                          4.916e+11 1.797e+12    0.274 0.784597
## f5a3i_9                                 NA        NA       NA        NA
## f5a3i_10                                NA        NA       NA        NA
## f5a3i_11                                NA        NA       NA        NA
## f5a3i_12                                NA        NA       NA        NA
## f5a3i_13                         -3.388e+11 1.840e+12   -0.184 0.854008
## f5a3i_91                          2.262e+12 2.019e+12    1.120 0.263192
## f5a4k_1                           2.964e+11 1.984e+11    1.494 0.135907
## f5a4k_2                          -8.172e+10 5.881e+11   -0.139 0.889548
## f5a4k_3                          -1.625e+12 1.448e+12   -1.122 0.262415
## f5a4k_4                           2.257e+11 2.423e+11    0.931 0.352215
## f5a4k_5                           4.284e+11 3.094e+11    1.384 0.166975
## f5a4k_6                           4.733e+11 3.810e+11    1.242 0.214850
## f5a4k_7                           2.106e+11 2.830e+11    0.744 0.457145
## f5a4k_91                                NA        NA       NA        NA
## cf5hhsize                        -4.729e+11 2.887e+11   -1.638 0.102145
## f5a6g01_1                        -1.073e+11 6.276e+10   -1.710 0.087963 .
## f5a6g01_2                         2.918e+10 5.574e+10    0.523 0.600951
## f5a6g01_3                        -1.264e+11 8.348e+10   -1.514 0.130804
## f5a6g01_4                         2.019e+11 3.155e+11    0.640 0.522639
## f5a6g01_5                        -7.013e+10 7.611e+10   -0.921 0.357398
## f5a6g01_6                        -8.878e+10 7.554e+10   -1.175 0.240546
## f5a6g01_7                        -1.051e+10 7.102e+10   -0.148 0.882416
## f5a6g01_8                         2.342e+11 1.630e+11    1.436 0.151624
## f5a6g01_9                        -4.074e+11 4.423e+11   -0.921 0.357509
## f5a6g01_10                       -5.800e+11 3.933e+11   -1.475 0.141039
## f5a6g01_11                        1.253e+12 1.339e+12    0.935 0.350154
## f5a6g01_12                       -1.976e+11 1.861e+11   -1.062 0.288965
## f5a6g01_13                       -4.544e+10 6.041e+10   -0.752 0.452423
## f5a6g01_91                       -7.487e+10 1.679e+11   -0.446 0.655896
## f5a6g02_1                         2.021e+11 2.943e+11    0.687 0.492677
## f5a6g02_2                         9.313e+09 1.927e+11    0.048 0.961479
## f5a6g02_3                         9.195e+10 3.336e+11    0.276 0.782960
## f5a6g02_4                         2.757e+12 3.001e+12    0.919 0.358644
## f5a6g02_5                        -9.205e+10 4.955e+11   -0.186 0.852708
## f5a6g02_6                         6.916e+10 1.623e+11    0.426 0.670294
## f5a6g02_7                         7.986e+10 1.628e+11    0.491 0.623935
## f5a6g02_8                         7.758e+09 2.261e+11    0.034 0.972643
## f5a6g02_9                        -1.223e+13 5.950e+12   -2.055 0.040485 *
## f5a6g02_10                        3.057e+12 1.974e+12    1.549 0.122257
## f5a6g02_11                        5.204e+12 6.963e+12    0.747 0.455307
## f5a6g02_12                        6.234e+11 5.204e+11    1.198 0.231616
## f5a6g02_13                        6.153e+10 1.897e+11    0.324 0.745851
## f5a6g02_91                        1.465e+11 2.066e+11    0.709 0.478582
## f5a6g03_1                        -5.905e+10 2.906e+11   -0.203 0.839092
## f5a6g03_2                        -1.225e+10 1.143e+11   -0.107 0.914679
## f5a6g03_3                         6.029e+10 1.485e+11    0.406 0.685051
## f5a6g03_4                         1.778e+12 1.913e+12    0.930 0.353048
## f5a6g03_5                         1.305e+10 4.679e+11    0.028 0.977771
## f5a6g03_6                        -6.515e+10 1.858e+11   -0.351 0.726041
## f5a6g03_7                        -7.307e+11 4.708e+11   -1.552 0.121427
```

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## f5a6g03_8          -9.394e+11  5.708e+11  -1.646 0.100598
## f5a6g03_9                  NA         NA      NA       NA
## f5a6g03_10                 NA         NA      NA       NA
## f5a6g03_11                 NA         NA      NA       NA
## f5a6g03_12          1.916e+11  2.037e+11   0.941 0.347443
## f5a6g03_13         -6.579e+10  1.091e+11  -0.603 0.546850
## f5a6g03_91         -1.720e+11  1.623e+11  -1.059 0.290015
## f5b6a2_1            9.334e+10  8.775e+10   1.064 0.288112
## f5b6a2_2                   NA         NA      NA       NA
## f5b6a2_3                   NA         NA      NA       NA
## f5b6a2_91                  NA         NA      NA       NA
## f5b8c_1             5.709e+12  5.739e+12   0.995 0.320453
## f5b8c_2             5.404e+12  5.710e+12   0.946 0.344474
## f5b8c_3            -1.763e+13  1.818e+13  -0.970 0.332524
## f5b8c_91            5.619e+12  5.778e+12   0.972 0.331424
## f5b11a_1           -5.247e+11  2.973e+11  -1.765 0.078296 .
## f5b11a_2           -2.536e+11  1.764e+11  -1.438 0.151191
## f5b11a_3            1.310e+12  6.895e+11   1.900 0.058137 .
## f5b11a_91          -4.589e+11  2.661e+11  -1.724 0.085392 .
## f5b17d_1           -1.418e+11  1.550e+11  -0.915 0.360541
## f5b17d_2            2.765e+11  1.488e+11   1.857 0.063972 .
## f5b17d_3            9.488e+10  1.180e+11   0.804 0.421887
## f5b17d_4            2.505e+11  2.330e+11   1.075 0.282970
## f5b17d_5            2.278e+11  2.200e+11   1.035 0.301165
## f5b17d_6           -8.512e+11  6.717e+11  -1.267 0.205778
## f5b17d_7           -2.210e+11  2.595e+11  -0.851 0.395044
## f5b17d_8            3.989e+10  1.035e+11   0.385 0.700161
## f5b17d_91           2.981e+11  3.077e+11   0.969 0.333238
## f5e2a_1             8.348e+09  7.510e+10   0.111 0.911544
## f5e2a_2            -3.474e+10  3.352e+10  -1.036 0.300710
## f5e2a_3             1.236e+11  1.301e+11   0.951 0.342381
## f5e2a_4            -5.835e+10  4.189e+10  -1.393 0.164443
## f5e2a_5             7.290e+10  8.103e+10   0.900 0.368778
## f5e2a_6            -2.034e+10  3.564e+10  -0.571 0.568533
## f5e2a_7             9.159e+10  9.463e+10   0.968 0.333664
## f5e2a_8            -1.514e+10  4.913e+10  -0.308 0.758104
## f5e2a_91           -1.758e+11  3.135e+11  -0.561 0.575379
## f5e9_0              1.155e+11  7.115e+10   1.624 0.105221
## f5e9_1              6.855e+09  2.176e+10   0.315 0.752874
## f5e9_2              2.001e+10  1.614e+10   1.240 0.215800
## f5e9_3              6.100e+09  1.686e+10   0.362 0.717639
## f5e9_4              1.866e+08  5.339e+09   0.035 0.972137
## f5e9_5             -1.091e+09  1.520e+10  -0.072 0.942807
## f5e9_6             -5.143e+09  2.877e+10  -0.179 0.858192
## f5e9_7             -8.613e+08  4.406e+10  -0.020 0.984412
## f5e8_0             -8.604e+10  6.139e+10  -1.401 0.161828
## f5e8_1             -4.638e+09  6.644e+09  -0.698 0.485504
## f5e8_2              1.486e+10  1.168e+10   1.272 0.204061
## f5e8_3             -4.291e+10  2.903e+10  -1.478 0.140137
## f5e8_4             -1.589e+10  8.345e+09  -1.903 0.057667 .
## f5e8_5             -9.400e+09  2.028e+10  -0.464 0.643227
## f5e8_6              1.729e+10  4.465e+10   0.387 0.698740
## f5e8_7              3.233e+09  3.093e+10   0.105 0.916796
## f5f16a_1           -7.492e+12  5.469e+12  -1.370 0.171503
```

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## f5f16a_2                 -6.963e+12  5.298e+12  -1.314 0.189527
## f5f16a_3                  3.755e+16  2.307e+17   0.163 0.870765
## f5f16a_4                 -7.064e+12  5.377e+12  -1.314 0.189679
## f5f16a_91                -3.752e+16  2.311e+17  -0.162 0.871097
## f5g23a_1                 -7.149e+10  7.952e+10  -0.899 0.369163
## f5g23a_2                  8.801e+10  1.143e+11   0.770 0.441563
## f5g23a_3                 -2.351e+11  3.524e+11  -0.667 0.505027
## f5g23a_4                  9.914e+10  9.127e+10   1.086 0.277994
## f5g23a_5                 -4.433e+10  1.236e+11  -0.359 0.719952
## f5g23a_91                 1.510e+11  8.639e+10   1.748 0.081172 .
## f5i2_1                    2.938e+11  5.710e+11   0.514 0.607193
## f5i2_2                   -2.057e+10  2.172e+12  -0.009 0.992449
## f5i2_3                   -6.628e+10  1.624e+11  -0.408 0.683389
## f5i2_4                   -2.669e+11  2.414e+11  -1.106 0.269452
## f5i2_5                    1.202e+11  2.901e+12   0.041 0.966964
## f5i2_6                           NA         NA      NA       NA
## f5i2_7                   -3.481e+10  2.679e+11  -0.130 0.896663
## f5i2_8                           NA         NA      NA       NA
## f5i2_9                   -4.635e+10  2.135e+11  -0.217 0.828213
## f5i2_10                  -6.338e+10  1.131e+11  -0.561 0.575332
## f5i2_11                   2.268e+11  2.725e+11   0.832 0.405735
## f5i2_12                          NA         NA      NA       NA
## f5i2_13                  -1.100e+11  2.412e+11  -0.456 0.648572
## f5i2_14                  -2.832e+10  2.073e+11  -0.137 0.891390
## f5i2_15                  -1.184e+11  2.576e+11  -0.459 0.646136
## f5i3a_1                  -6.109e+11  6.856e+12  -0.089 0.929038
## f5i3a_2                   2.112e+12  1.641e+12   1.287 0.198937
## f5i3a_3                  -3.315e+10  3.876e+11  -0.086 0.931889
## f5i3a_4                   1.153e+11  1.621e+11   0.711 0.477309
## f5i3a_5                   2.207e+11  1.243e+11   1.775 0.076590 .
## f5i3a_6                  -2.302e+12  7.663e+12  -0.300 0.764058
## f5i3a_7                   8.048e+10  7.274e+10   1.106 0.269234
## f5i3a_8                   2.227e+11  1.557e+11   1.431 0.153272
## f5i3a_9                   4.220e+10  7.195e+10   0.587 0.557792
## f5i3a_10                  4.509e+10  6.886e+10   0.655 0.512976
## f5i3a_11                 -1.913e+11  1.195e+11  -1.602 0.110014
## f5i3a_12                  1.672e+11  1.202e+11   1.391 0.165073
## f5i3a_13                  9.648e+10  6.470e+10   1.491 0.136693
## f5i3a_14                 -1.726e+10  3.219e+10  -0.536 0.592047
## f5i3a_15                 -7.702e+09  5.800e+10  -0.133 0.894432
## f5i3a_16                  2.919e+09  8.848e+10   0.033 0.973701
## f5i24g_1                 -6.816e+11  1.716e+12  -0.397 0.691498
## f5i24g_2                 -8.036e+11  1.590e+12  -0.505 0.613534
## f5i24g_3                  7.501e+11  1.900e+12   0.395 0.693219
## f5i24g_4                  1.210e+12  3.292e+12   0.367 0.713439
## f5i24g_91                -4.177e+11  1.605e+12  -0.260 0.794807
## f5i26g_1                  7.072e+11  4.459e+11   1.586 0.113524
## f5i26g_2                         NA         NA      NA       NA
## f5i26g_3                  3.823e+12  3.884e+12   0.984 0.325501
## f5i26g_4                 -4.564e+12  4.092e+12  -1.115 0.265326
## f5i26g_91                        NA         NA      NA       NA
## f5a3a1_101               -1.676e+10  1.726e+10  -0.971 0.332272
## f5a3a1_102                5.686e+10  3.444e+10   1.651 0.099460 .
## f5a3a1_103                3.077e+09  1.281e+10   0.240 0.810239
```

```
## f5a3h_101      2.200e+10  2.571e+11   0.086 0.931849
## f5a3h_102      1.560e+11  2.367e+11   0.659 0.510075
## f5a3h_103      3.189e+11  2.224e+11   1.434 0.152356
## f5a3h_104     -1.001e+11  1.811e+11  -0.553 0.580644
## f5a3h_105     -9.550e+10  1.869e+11  -0.511 0.609607
## f5a3h_106     -8.180e+10  2.750e+11  -0.297 0.766258
## f5a3h_107     -1.987e+12  1.066e+12  -1.864 0.062966 .
## f5a3h_108     -5.215e+11  3.076e+11  -1.695 0.090751 .
## f5a3h_109      3.232e+11  1.909e+11   1.693 0.091189 .
## f5a3h_110      2.216e+12  2.764e+12   0.802 0.423066
## f5a3i_102     -1.142e+11  2.253e+11  -0.507 0.612516
## f5a3i_101            NA         NA      NA       NA
## f5a3i_103     -1.394e+10  2.506e+11  -0.056 0.955666
## f5a4k_101      4.376e+10  4.978e+10   0.879 0.379876
## f5b11a_101    -8.415e+10  4.600e+10  -1.829 0.068065 .
## f5b11a_102    -3.400e+10  2.409e+10  -1.412 0.158807
## f5b11a_103    -2.086e+10  1.412e+10  -1.477 0.140562
## f5b11a_104     1.238e+12  1.010e+12   1.226 0.220848
## f5b11a_105    -5.681e+10  3.633e+10  -1.564 0.118617
## f5b11a_106    -8.586e+10  7.851e+10  -1.094 0.274760
## f5b17d_101     4.759e+09  1.903e+10   0.250 0.802689
## f5b17d_102     3.299e+10  2.211e+10   1.492 0.136363
## f5b17d_103     7.326e+09  2.089e+10   0.351 0.726052
## f5b22_101     -1.907e+10  2.640e+10  -0.723 0.470334
## f5b22_102      1.780e+10  1.750e+10   1.017 0.309764
## f5b22_103     -2.659e+10  2.545e+10  -1.045 0.296715
## f5b22_104      1.255e+10  7.700e+09   1.630 0.103953
## f5b22_105     -8.628e+09  7.881e+09  -1.095 0.274240
## f5b22_106     -2.382e+09  3.464e+09  -0.688 0.492116
## f5b22_107     -2.310e+09  5.878e+09  -0.393 0.694554
## f5b22_108      1.602e+10  1.827e+10   0.877 0.381128
## f5f7_101      -3.328e+09  3.591e+10  -0.093 0.926208
## f5f7_102       1.258e+11  1.140e+11   1.104 0.270366
## f5f7_103      -9.905e+10  7.799e+10  -1.270 0.204803
## f5f7_104      -3.642e+11  2.836e+11  -1.284 0.199747
## f5g23a_101     1.627e+09  3.127e+10   0.052 0.958519
## f5g23a_102    -2.558e+10  2.872e+10  -0.891 0.373693
## f5i2_101      -1.386e+10  4.771e+10  -0.291 0.771539
## f5i2_102      -1.692e+10  2.406e+10  -0.703 0.482390
## f5i3a_101            NA         NA      NA       NA
## f5i3a_102      1.282e+10  9.145e+09   1.402 0.161763
## f5i24g_101    -8.248e+10  2.319e+11  -0.356 0.722293
## f5i24g_102    -4.636e+10  2.221e+11  -0.209 0.834729
## cf5gmom       -1.053e+11  7.986e+10  -1.319 0.188030
## cf5gdad        1.207e+11  9.906e+10   1.218 0.223870
## cf5adult      -1.283e+11  1.149e+11  -1.117 0.264671
## cf5kids       -7.036e+10  5.142e+10  -1.368 0.171905
## cf5fint              NA         NA      NA       NA
## n5a1          -1.859e+11  2.834e+11  -0.656 0.512226
## n5a2           9.192e+12  2.203e+13   0.417 0.676652
## n5a3          -9.164e+12  1.274e+13  -0.719 0.472498
## n5a4          -4.312e+11  1.743e+12  -0.247 0.804697
## n5a5          -1.159e+13  2.114e+13  -0.548 0.583882
## n5a6b          4.323e+12  3.070e+12   1.408 0.159939
```

```
## n5a7                     9.051e+09  1.516e+10   0.597 0.550903
## n5a8                    -1.881e+12  1.355e+12  -1.388 0.165801
## n5a10                   -5.085e+10  2.231e+11  -0.228 0.819799
## n5a12                    5.383e+12  3.251e+12   1.656 0.098512 .
## n5a13                   -1.111e+13  6.806e+12  -1.632 0.103450
## n5a13a                  -4.702e+11  8.848e+11  -0.531 0.595364
## n5a13b                  -4.395e+11  2.860e+12  -0.154 0.877936
## n5a14                    8.692e+12  5.225e+12   1.664 0.096936 .
## n5a15                    2.431e+12  1.909e+13   0.127 0.898718
## n5a16a                   4.644e+11  2.714e+12   0.171 0.864257
## n5a16b                  -4.143e+11  4.048e+11  -1.023 0.306693
## n5a17b                  -7.114e+11  5.978e+11  -1.190 0.234742
## n5b0a                    2.332e+11  2.890e+11   0.807 0.420252
## n5b1                    -5.129e+11  1.028e+12  -0.499 0.618211
## n5b2                    -2.275e+12  2.565e+12  -0.887 0.375684
## n5b2c                    1.305e+10  1.129e+10   1.156 0.248221
## n5b3a                   -3.814e+12  3.922e+12  -0.973 0.331323
## n5b3b                   -3.460e+11  9.360e+11  -0.370 0.711814
## n5b3c                   -3.410e+11  3.508e+12  -0.097 0.922623
## n5b3d                    3.125e+12  2.959e+12   1.056 0.291671
## n5b3e                   -1.991e+12  7.733e+12  -0.257 0.796926
## n5b3f                    6.730e+12  4.190e+12   1.606 0.108987
## n5b3g                   -1.324e+12  1.588e+12  -0.834 0.404979
## n5b3h                   -3.448e+12  2.133e+12  -1.616 0.106854
## n5b3i                    3.597e+12  8.943e+12   0.402 0.687740
## n5c0a                   -5.255e+11  6.031e+11  -0.871 0.384087
## n5c1                    -1.496e+12  2.860e+12  -0.523 0.601248
## n5c2                     2.041e+12  3.007e+12   0.679 0.497680
## n5c2a                   -4.870e+11  3.772e+11  -1.291 0.197373
## n5c2c                    1.744e+09  5.159e+09   0.338 0.735483
## n5c3a                    3.721e+12  1.696e+13   0.219 0.826422
## n5c3b                   -9.470e+12  1.854e+13  -0.511 0.609689
## n5c3c                   -8.429e+12  7.827e+12  -1.077 0.282138
## n5c3d                   -2.733e+12  6.717e+12  -0.407 0.684331
## n5c3e                    2.204e+12  5.972e+12   0.369 0.712309
## n5c3f                    3.322e+10  7.186e+12   0.005 0.996314
## n5c3g                    1.189e+12  7.649e+12   0.155 0.876549
## n5c3h                   -3.078e+12  3.314e+12  -0.929 0.353630
## n5c3i                    1.669e+13  1.357e+13   1.230 0.219311
## n5d1                     9.103e+12  7.264e+12   1.253 0.210854
## n5d2a                   -2.808e+12  3.430e+12  -0.819 0.413520
## n5d3                            NA         NA      NA       NA
## n5d3b_1                         NA         NA      NA       NA
## n5d3c_1                         NA         NA      NA       NA
## n5d3d_1                         NA         NA      NA       NA
## n5d3b_2                         NA         NA      NA       NA
## n5d3d_2                         NA         NA      NA       NA
## n5d3e_2                         NA         NA      NA       NA
## n5d3b_3                         NA         NA      NA       NA
## n5d3c2_3                        NA         NA      NA       NA
## n5d3d_3                         NA         NA      NA       NA
## n5d3e_3                         NA         NA      NA       NA
## n5d3b_4                         NA         NA      NA       NA
## n5d3d_4                         NA         NA      NA       NA
```

```
## n5d3e_4                                    NA         NA       NA       NA
## n5d3b_5                                    NA         NA       NA       NA
## n5d3d_5                                    NA         NA       NA       NA
## n5d3e_5                                    NA         NA       NA       NA
## n5d3b_6                                    NA         NA       NA       NA
## n5d3d_6                                    NA         NA       NA       NA
## n5d3e_6                                    NA         NA       NA       NA
## n5d3b_7                                    NA         NA       NA       NA
## n5d3c_7                                    NA         NA       NA       NA
## n5d3d_7                                    NA         NA       NA       NA
## n5d3e_7                                    NA         NA       NA       NA
## n5d3b_8                                    NA         NA       NA       NA
## n5d3c_8                                    NA         NA       NA       NA
## n5d3d_8                             5.964e+11  5.717e+11    1.043 0.297513
## n5d3f                                      NA         NA       NA       NA
## n5d3h                                      NA         NA       NA       NA
## n5d5a                                      NA         NA       NA       NA
## n5d5c                                      NA         NA       NA       NA
## n5e1                                       NA         NA       NA       NA
## n5e1b                              5.969e+10  8.565e+10    0.697 0.486270
## n5e2                                       NA         NA       NA       NA
## n5e3a                                      NA         NA       NA       NA
## n5f0                                       NA         NA       NA       NA
## n5f1                                       NA         NA       NA       NA
## n5f2                                       NA         NA       NA       NA
## n5f2b                                      NA         NA       NA       NA
## n5f2c                                      NA         NA       NA       NA
## n5f2d                                      NA         NA       NA       NA
## n5f2d1                                     NA         NA       NA       NA
## n5f2e                                      NA         NA       NA       NA
## n5f3                                       NA         NA       NA       NA
## n5f4                                       NA         NA       NA       NA
## n5f5                                       NA         NA       NA       NA
## n5f6                                       NA         NA       NA       NA
## n5f7                                       NA         NA       NA       NA
## n5f8                                       NA         NA       NA       NA
## n5f9                                       NA         NA       NA       NA
## n5f10                                      NA         NA       NA       NA
## n5f11                                      NA         NA       NA       NA
## n5f11a                                     NA         NA       NA       NA
## n5f12                                      NA         NA       NA       NA
## n5f12a                                     NA         NA       NA       NA
## n5f13                                      NA         NA       NA       NA
## n5f14                                      NA         NA       NA       NA
## n5f15                                      NA         NA       NA       NA
## n5f16a                                     NA         NA       NA       NA
## n5f16b                                     NA         NA       NA       NA
## n5f16c                                     NA         NA       NA       NA
## n5f16d                                     NA         NA       NA       NA
## n5f16e                                     NA         NA       NA       NA
## n5f17                                      NA         NA       NA       NA
## n5f18                                      NA         NA       NA       NA
## n5g1a                                      NA         NA       NA       NA
## n5g1b                                      NA         NA       NA       NA
```

```
## n5g1c                                      NA          NA          NA          NA
## n5g1d                                      NA          NA          NA          NA
## n5g1e                                      NA          NA          NA          NA
## n5g1f                                      NA          NA          NA          NA
## n5g1g                                      NA          NA          NA          NA
## n5g1h                                      NA          NA          NA          NA
## n5g1i                                      NA          NA          NA          NA
## n5g1j                                      NA          NA          NA          NA
## n5a6_1                                     NA          NA          NA          NA
## n5a6_2                                     NA          NA          NA          NA
## n5a6_3                                     NA          NA          NA          NA
## n5a6_4                                     NA          NA          NA          NA
## n5a6_5                                     NA          NA          NA          NA
## n5a6_6                                     NA          NA          NA          NA
## n5a6_7                                     NA          NA          NA          NA
## n5a6_8                                     NA          NA          NA          NA
## n5a6_91                                    NA          NA          NA          NA
## n5a9_1                                     NA          NA          NA          NA
## n5a9_2                                     NA          NA          NA          NA
## n5a9_3                                     NA          NA          NA          NA
## n5a9_4                                     NA          NA          NA          NA
## n5a9_5                                     NA          NA          NA          NA
## n5a9_6                                     NA          NA          NA          NA
## n5a9_7                                     NA          NA          NA          NA
## n5a9_8                                     NA          NA          NA          NA
## n5a9_9                                     NA          NA          NA          NA
## n5a9_10                                    NA          NA          NA          NA
## n5a9_11                                    NA          NA          NA          NA
## n5a9_12                                    NA          NA          NA          NA
## n5a9_91                                    NA          NA          NA          NA
## n5a11_1                                    NA          NA          NA          NA
## n5a11_2                                    NA          NA          NA          NA
## n5a11_3                                    NA          NA          NA          NA
## n5a11_4                                    NA          NA          NA          NA
## n5a11_5                                    NA          NA          NA          NA
## n5a11_6                                    NA          NA          NA          NA
## n5a11_7                                    NA          NA          NA          NA
## n5a11_8                                    NA          NA          NA          NA
## n5a11_9                                    NA          NA          NA          NA
## n5a11_10                                   NA          NA          NA          NA
## n5a11_11                                   NA          NA          NA          NA
## n5a11_12                                   NA          NA          NA          NA
## n5a11_13                                   NA          NA          NA          NA
## n5a11_91                                   NA          NA          NA          NA
## n5a11_101                                  NA          NA          NA          NA
## n5a11_102                                  NA          NA          NA          NA
## n5a11_103                                  NA          NA          NA          NA
## n5a16_1                                    NA          NA          NA          NA
## n5a16_2                                    NA          NA          NA          NA
## n5a16_3                                    NA          NA          NA          NA
## n5a16_4                                    NA          NA          NA          NA
## n5a16_91                                   NA          NA          NA          NA
## n5a16_101                                  NA          NA          NA          NA
## n5a16_102                                  NA          NA          NA          NA
```

```
## cn5stat                  -2.266e-03  6.058e-03  -0.374 0.708556
## cn5nint                          NA         NA      NA        NA
## pcg5stat                  2.460e+10  1.568e+10   1.569 0.117399
## pcg5idstat                8.904e-04  1.675e-03   0.531 0.595392
## p5h1                     -1.146e+10  8.800e+09  -1.302 0.193645
## p5h1a                     2.427e+10  1.318e+10   1.842 0.066261 .
## p5h1b                     1.001e+11  2.700e+11   0.371 0.710987
## p5h1ca                    2.075e+10  1.878e+10   1.105 0.269856
## p5h1cb                   -1.883e+10  1.377e+10  -1.367 0.172230
## p5h1cc                    6.630e+09  3.666e+10   0.181 0.856586
## p5h1cd                   -1.945e+10  4.251e+10  -0.458 0.647504
## p5h1ce                    2.041e+10  1.920e+10   1.063 0.288340
## p5h4                     -2.576e+10  1.687e+10  -1.527 0.127502
## p5h5                     -2.148e+09  1.820e+09  -1.180 0.238623
## p5h6                     -4.759e+09  1.389e+10  -0.343 0.732119
## p5h7                      1.053e+10  4.066e+10   0.259 0.795855
## p5h8                     -1.852e+09  1.123e+09  -1.649 0.099901 .
## p5h10                    -5.503e+09  1.165e+10  -0.472 0.636885
## p5h11                     1.951e+11  2.077e+11   0.939 0.348083
## p5h12                     2.866e+10  2.850e+10   1.006 0.315121
## p5h13                    -2.634e+10  3.069e+10  -0.858 0.391226
## p5h14                     1.264e+11  9.109e+10   1.388 0.165826
## p5h15                     2.916e-02  8.201e-02   0.356 0.722340
## p5h15a                   -2.996e+10  3.284e+10  -0.912 0.362176
## p5h15b                   -4.345e+09  3.707e+09  -1.172 0.241758
## p5h15c                    5.878e+09  6.078e+09   0.967 0.334013
## p5h16                     1.490e+10  1.029e+10   1.448 0.148455
## p5h16b                   -2.631e+10  2.131e+10  -1.235 0.217715
## p5h17                    -5.234e+09  5.721e+09  -0.915 0.360849
## p5h17a                   -1.650e+10  1.477e+10  -1.117 0.264641
## p5h17b                    1.538e+10  1.212e+10   1.268 0.205414
## p5h19                    -1.937e+09  1.213e+10  -0.160 0.873127
## p5h19a                    7.333e+10  3.824e+10   1.918 0.055828 .
## p5h21                    -1.262e+10  1.230e+10  -1.026 0.305351
## p5h22                     7.794e+10  4.915e+10   1.586 0.113587
## p5h22a                   -9.036e+09  4.878e+10  -0.185 0.853128
## p5h22b                    3.667e+10  8.715e+10   0.421 0.674106
## p5h23                    -3.035e+09  5.263e+09  -0.577 0.564492
## p5i1a                     3.784e+09  8.863e+09   0.427 0.669682
## p5i1b                     7.004e+09  6.706e+09   1.044 0.296948
## p5i1c                     5.632e+09  5.891e+09   0.956 0.339625
## p5i1d                    -1.036e+09  1.142e+10  -0.091 0.927771
## p5i1e                     2.412e+09  1.958e+09   1.232 0.218641
## p5i1f                    -1.548e+08  3.098e+09  -0.050 0.960171
## p5i1g                     8.831e+09  5.776e+09   1.529 0.127007
## p5i1h                    -1.264e+09  9.139e+09  -0.138 0.890031
## p5i1i                     1.200e+10  8.922e+09   1.345 0.179205
## p5i1j                     1.888e+09  3.156e+09   0.598 0.550135
## p5i2a                    -2.289e+10  1.416e+10  -1.617 0.106726
## p5i2b                    -1.623e+10  1.154e+10  -1.407 0.160280
## p5i2c                    -1.769e+10  1.229e+10  -1.440 0.150685
## p5i2d                     7.734e+09  6.499e+09   1.190 0.234728
## p5i2e                     2.725e+10  1.941e+10   1.404 0.161121
## p5i3                     -5.383e+09  3.851e+09  -1.398 0.162931
```

```
## p5i5                        1.851e+09  1.305e+09    1.419 0.156664
## p5i7                        1.233e+09  7.997e+09    0.154 0.877527
## p5i8                       -2.904e+09  5.153e+09   -0.564 0.573379
## p5i9                       -5.549e+09  3.461e+10   -0.160 0.872707
## p5i10                      -4.947e+09  5.066e+09   -0.977 0.329372
## p5i10b                      2.392e+09  2.463e+09    0.971 0.332051
## p5i11                       1.256e+09  3.648e+09    0.344 0.730731
## p5i12                       4.751e+09  1.130e+10    0.420 0.674338
## p5i13                      -1.294e+09  3.753e+09   -0.345 0.730352
## p5i14                      -4.834e+09  1.384e+10   -0.349 0.727072
## p5i16                       2.933e+08  5.080e+09    0.058 0.953979
## p5i17                      -1.703e+11  1.761e+11   -0.968 0.333839
## p5i18b                     -2.632e+09  1.014e+10   -0.259 0.795398
## p5i19                       1.694e+10  1.018e+10    1.665 0.096757 .
## p5i20a                      3.784e+10  5.048e+10    0.750 0.453880
## p5i20b                     -2.016e+08  1.135e+10   -0.018 0.985833
## p5i20c                      1.736e+10  2.599e+10    0.668 0.504585
## p5i21a                      3.479e+09  8.465e+09    0.411 0.681335
## p5i21b                     -6.631e+09  2.226e+10   -0.298 0.765944
## p5i22a                      6.855e+09  4.927e+09    1.392 0.164810
## p5i22b                     -1.163e+09  8.908e+09   -0.131 0.896213
## p5i22c                     -9.772e+09  5.331e+09   -1.833 0.067501 .
## p5i22d                     -5.948e+09  7.251e+09   -0.820 0.412544
## p5i22e                      8.101e+09  7.912e+09    1.024 0.306512
## p5i23                       1.328e+10  8.108e+09    1.638 0.102151
## p5i24                      -2.237e+09  5.064e+09   -0.442 0.658973
## p5i26                      -1.002e+10  6.964e+09   -1.438 0.151104
## p5i27                      -6.256e+08  5.548e+09   -0.113 0.910283
## p5i28                      -1.792e+09  3.811e+09   -0.470 0.638423
## p5i29                      -3.007e+09  1.943e+09   -1.548 0.122407
## p5i30a                     -2.478e+08  2.460e+10   -0.010 0.991968
## p5i30c                     -1.085e+10  1.781e+10   -0.609 0.542629
## p5i31a                      8.998e+09  4.510e+09    1.995 0.046665 *
## p5i31b                     -8.669e+09  8.995e+09   -0.964 0.335706
## p5i31c                     -3.802e+09  1.197e+10   -0.318 0.750845
## p5i31d                     -2.060e+09  5.923e+09   -0.348 0.728170
## p5i31e                     -9.134e+08  2.148e+09   -0.425 0.670886
## p5i31f                     -4.323e+08  8.734e+09   -0.049 0.960550
## p5i31g                     -6.826e+09  3.622e+09   -1.885 0.060172 .
## p5i31h                      6.361e+09  1.146e+10    0.555 0.579002
## p5i31i                     -1.889e+09  4.546e+09   -0.416 0.677980
## p5i31j                      2.255e+09  8.619e+09    0.262 0.793719
## p5i32a                     -8.567e+09  6.561e+09   -1.306 0.192407
## p5i32b                      5.776e+09  7.482e+09    0.772 0.440583
## p5i32c                     -9.424e+09  5.869e+09   -1.606 0.109093
## p5i33a                     -1.077e+09  2.526e+09   -0.427 0.669951
## p5i33b                      2.982e+09  2.587e+09    1.152 0.249823
## p5i33c                     -8.331e+08  1.089e+09   -0.765 0.444886
## p5i35                      -1.160e+07  1.563e+10   -0.001 0.999408
## p5i36                       1.832e+10  2.347e+10    0.781 0.435523
## p5i37                      -1.377e+10  1.111e+10   -1.240 0.215559
## p5i38a                     -1.219e+10  9.274e+09   -1.314 0.189592
## p5i38b                     -2.273e+09  1.739e+10   -0.131 0.896061
## p5i38c                      2.530e+10  1.547e+10    1.636 0.102672
```

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## p5i39a                    -3.480e+09  4.078e+09  -0.853 0.393886
## p5i40a                     2.093e+10  1.754e+10   1.193 0.233569
## p5i40b                     5.338e+09  8.604e+09   0.620 0.535372
## p5i40c                    -1.500e+10  1.194e+10  -1.257 0.209540
## p5i40d                    -7.796e+09  8.774e+09  -0.889 0.374733
## p5i40e                     2.830e+10  1.817e+10   1.558 0.120007
## p5i40f                    -1.375e+09  2.266e+10  -0.061 0.951650
## p5i40g                    -8.204e+09  5.837e+09  -1.406 0.160580
## p5i40h                    -2.448e+09  5.644e+09  -0.434 0.664679
## p5i40i                    -1.786e+10  2.773e+10  -0.644 0.520049
## p5i40j                    -1.626e+10  2.716e+10  -0.599 0.549633
## p5i41a                     2.073e+10  4.525e+10   0.458 0.647147
## p5i41b                    -2.776e+10  1.639e+10  -1.694 0.090927 .
## p5i41c                    -4.210e+09  3.662e+10  -0.115 0.908529
## p5i42a                    -2.178e+10  1.133e+10  -1.921 0.055392 .
## p5i42b                     8.896e+08  3.338e+09   0.267 0.789951
## p5i42c                     2.546e+10  2.421e+10   1.052 0.293611
## p5i44                      3.944e+10  3.967e+10   0.994 0.320785
## p5i45                      2.027e+10  1.382e+10   1.467 0.143018
## p5i46                     -2.310e+10  1.809e+10  -1.277 0.202330
## p5i47a                    -1.946e+10  1.487e+10  -1.309 0.191361
## p5i47b                    -8.532e+09  9.894e+09  -0.862 0.388990
## p5i47c                     2.043e+10  2.386e+10   0.856 0.392350
## p5j1                      -9.310e+09  7.233e+09  -1.287 0.198761
## p5j2a                      3.196e+09  3.856e+09   0.829 0.407693
## p5j2b                      1.687e+09  4.223e+09   0.400 0.689722
## p5j2c                      4.640e+08  2.391e+09   0.194 0.846203
## p5j2d                     -8.318e+09  6.596e+09  -1.261 0.207954
## p5j2e                     -1.095e+10  8.105e+09  -1.351 0.177452
## p5j2f                     -2.052e+09  2.747e+09  -0.747 0.455495
## p5j2g                      1.864e+09  4.479e+09   0.416 0.677444
## p5j2h                     -1.096e+10  7.105e+09  -1.543 0.123614
## p5j2i                      3.068e+09  5.188e+09   0.591 0.554521
## p5j2j                     -1.237e+09  4.720e+09  -0.262 0.793482
## p5j3                      -6.324e+09  8.471e+09  -0.747 0.455729
## p5j4a                      1.849e+10  9.689e+09   1.908 0.057056 .
## p5j4b                     -6.629e+09  1.468e+10  -0.452 0.651822
## p5j4c                     -2.668e+09  3.207e+09  -0.832 0.405992
## p5j6                      -4.962e+09  1.003e+10  -0.495 0.620991
## p5j7a                     -3.019e+09  5.823e+09  -0.518 0.604457
## p5j7b                     -1.759e+10  1.652e+10  -1.065 0.287496
## p5j8                       2.483e+10  1.797e+10   1.381 0.167886
## p5j9a                      2.337e+09  1.928e+09   1.212 0.226016
## p5j9b                      1.942e+10  1.886e+10   1.030 0.303769
## p5j10a                     1.857e+09  1.018e+09   1.824 0.068821 .
## p5j10b                     3.275e+09  3.317e+09   0.987 0.324066
## p5j11                     -3.824e+08  1.057e+09  -0.362 0.717697
## p5j12                     -2.259e+08  5.345e+08  -0.423 0.672736
## p5j13                      3.742e+09  1.471e+10   0.254 0.799385
## p5k1a                      5.556e+08  6.236e+09   0.089 0.929040
## p5k1b                     -6.533e+09  5.280e+09  -1.237 0.216695
## p5k1c                      4.197e+09  6.313e+09   0.665 0.506464
## p5k1d                     -1.873e+09  1.047e+10  -0.179 0.858155
## p5k1e                     -1.594e+10  1.118e+10  -1.426 0.154510
```

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## p5k1f                    1.271e+10  1.252e+10   1.015 0.310597
## p5k1g                    1.499e+10  1.179e+10   1.271 0.204337
## p5l1                     1.358e+10  1.305e+10   1.041 0.298487
## p5l1a                   -4.450e+10  3.542e+10  -1.256 0.209776
## p5l2                    -1.120e+10  1.107e+10  -1.012 0.312139
## p5l3a                   -8.495e+09  7.460e+09  -1.139 0.255472
## p5l3b                    8.596e+09  4.507e+09   1.907 0.057162 .
## p5l3c                    7.499e+09  8.813e+09   0.851 0.395354
## p5l3d                    2.630e+09  2.541e+09   1.035 0.301149
## p5l3e                    1.561e+10  7.998e+09   1.951 0.051684 .
## p5l3f                   -2.714e+09  2.397e+10  -0.113 0.909889
## p5l3g                   -1.682e+10  1.673e+10  -1.006 0.315139
## p5l3h                   -1.802e+10  2.012e+10  -0.896 0.371025
## p5l3i                    7.662e+09  1.621e+10   0.473 0.636658
## p5l3j                    1.470e+09  3.294e+09   0.446 0.655535
## p5l4a                    8.816e+09  4.150e+10   0.212 0.831876
## p5l4b                    1.931e+09  6.455e+09   0.299 0.764987
## p5l4c                    2.903e+10  4.227e+10   0.687 0.492584
## p5l4d                    4.658e+09  7.087e+09   0.657 0.511401
## p5l5                    -9.989e+09  5.173e+09  -1.931 0.054179 .
## p5l5a                   -1.000e+10  8.282e+09  -1.208 0.227859
## p5l5b                   -5.014e+07  1.070e+08  -0.469 0.639590
## p5l10                    8.495e+08  4.482e+09   0.190 0.849762
## p5l11                    1.069e+10  1.178e+10   0.908 0.364621
## p5l12a                   7.007e+10  3.908e+10   1.793 0.073679 .
## p5l12b                  -5.028e+10  5.168e+10  -0.973 0.331221
## p5l12c                  -7.691e+09  2.724e+10  -0.282 0.777858
## p5l12d                  -6.746e+10  7.205e+10  -0.936 0.349676
## p5l12e                  -3.936e+10  8.001e+10  -0.492 0.623026
## p5l12f                   1.470e+09  3.656e+10   0.040 0.967953
## p5l12g                  -1.602e+10  1.391e+10  -1.152 0.250155
## p5l12h                   7.819e+10  4.040e+10   1.936 0.053604 .
## p5l12i                   4.205e+10  3.861e+10   1.089 0.276732
## p5l13a                  -2.456e+10  2.186e+10  -1.124 0.261764
## p5l13b                   9.229e+09  7.406e+09   1.246 0.213427
## p5l13c                  -5.519e+09  3.187e+10  -0.173 0.862596
## p5l13d                  -2.451e+10  2.212e+10  -1.108 0.268465
## p5l13e                   2.581e+09  1.610e+10   0.160 0.872709
## p5l13f                   2.672e+10  1.991e+10   1.342 0.180370
## p5l13g                  -7.475e+09  1.063e+10  -0.703 0.482359
## p5l13h                  -3.545e+07  9.638e+09  -0.004 0.997067
## p5l14                    1.813e+10  8.341e+10   0.217 0.828009
## p5l14a                   3.357e+08  9.471e+09   0.035 0.971743
## p5l15                   -6.991e+10  6.219e+10  -1.124 0.261604
## p5l17a                   3.465e+10  2.205e+10   1.572 0.116748
## p5l17b                   8.919e+09  8.120e+09   1.098 0.272686
## p5l17c                   6.162e+10  6.370e+10   0.967 0.333940
## p5l17d                  -1.173e+10  1.210e+10  -0.970 0.332713
## p5l17e                  -2.214e+10  1.152e+10  -1.922 0.055276 .
## p5l17f                  -1.932e+10  1.573e+10  -1.228 0.220069
## p5l17g                  -2.788e+10  4.129e+10  -0.675 0.499972
## p5l18                    1.337e+08  2.493e+09   0.054 0.957245
## p5l21a                   1.340e+09  1.165e+10   0.115 0.908445
## p5l23                   -1.016e+10  2.348e+10  -0.433 0.665479
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## p5l26                       1.192e+10  2.724e+10   0.438 0.661773
## p5m1                        1.163e+10  6.170e+09   1.885 0.060128 .
## p5m2a                      -6.290e+09  9.815e+09  -0.641 0.521996
## p5m2b                       3.691e+09  6.593e+09   0.560 0.575922
## p5m2c                      -2.111e+09  5.117e+09  -0.413 0.680149
## p5m2d                       1.052e+10  1.106e+10   0.951 0.342230
## p5m2e                      -4.626e+09  5.799e+09  -0.798 0.425490
## p5m3a                      -3.765e+09  2.886e+09  -1.305 0.192720
## p5m3b                       8.741e+09  7.513e+09   1.163 0.245330
## p5m3c                       9.196e+09  1.046e+10   0.879 0.379690
## p5m3d                      -3.775e+08  1.585e+09  -0.238 0.811901
## p5m3e                       9.755e+08  6.878e+09   0.142 0.887290
## p5m4                        9.457e+09  1.376e+10   0.687 0.492454
## p5m5a                       1.058e+10  9.777e+09   1.082 0.279807
## p5m5b                      -3.404e+10  1.846e+10  -1.844 0.065854 .
## p5m5c                       6.458e+09  1.890e+10   0.342 0.732769
## p5h14b_1                    5.881e+10  3.997e+10   1.472 0.141890
## p5h14b_2                    7.414e+10  6.291e+10   1.179 0.239230
## p5h14b_3                    4.086e+10  4.180e+10   0.978 0.328875
## p5h14b_4                    2.965e+10  3.100e+10   0.956 0.339387
## p5h14b_5                   -1.090e+10  1.531e+11  -0.071 0.943261
## p5h14b_6                    2.457e+10  3.797e+10   0.647 0.517823
## p5h14b_91                  -1.999e+11  1.186e+11  -1.684 0.092837 .
## p5i18a_1                   -3.870e+10  2.631e+10  -1.471 0.142151
## p5i18a_2                    7.978e+09  7.480e+09   1.067 0.286765
## p5i18a_3                   -1.475e+09  8.777e+09  -0.168 0.866587
## p5i18a_4                    8.781e+09  1.804e+10   0.487 0.626637
## p5l8_1                     -5.991e+09  1.286e+10  -0.466 0.641574
## p5l8_2                     -1.920e+10  5.384e+10  -0.357 0.721603
## p5l8_3                      7.008e+09  4.072e+10   0.172 0.863430
## p5l8_4                      1.195e+10  4.605e+10   0.259 0.795378
## p5l8_5                     -1.760e+10  2.292e+10  -0.768 0.443120
## p5l8_6                      1.337e+09  1.322e+10   0.101 0.919520
## p5l8_7                     -2.864e+10  1.684e+10  -1.701 0.089747 .
## p5l8_8                      4.568e+10  2.462e+10   1.856 0.064193 .
## p5l8_9                     -1.900e+10  4.025e+10  -0.472 0.637129
## p5l8_10                     5.968e+10  2.047e+11   0.292 0.770728
## p5l8_11                    -1.383e+11  3.022e+11  -0.458 0.647423
## p5l8_12                     3.629e+10  1.017e+11   0.357 0.721460
## p5l8_13                     6.439e+10  7.190e+10   0.896 0.370988
## p5l15a_1                    8.140e+10  5.262e+10   1.547 0.122638
## p5l15a_2                    8.550e+10  5.420e+10   1.578 0.115404
## p5l15a_3                    3.438e+10  6.767e+10   0.508 0.611692
## p5l15a_4                   -9.049e+10  6.345e+10  -1.426 0.154573
## p5l15a_5                   -1.146e+11  1.452e+11  -0.789 0.430350
## p5l12_101                  -3.902e+09  3.019e+09  -1.293 0.196865
## p5l12_102                  -1.146e+10  6.200e+09  -1.849 0.065160 .
## p5l12_103                  -1.102e+10  6.282e+09  -1.754 0.080184 .
## p5l12_104                   1.727e+10  1.708e+10   1.011 0.312636
## p5l12_105                  -1.709e+09  1.059e+10  -0.161 0.871867
## p5l12_106                   6.853e+09  8.325e+09   0.823 0.410906
## p5l12_107                  -7.238e+09  4.772e+09  -1.517 0.130120
## p5l17_101                  -1.662e+10  2.286e+10  -0.727 0.467551
## p5l17_102                  -8.514e+09  9.462e+09  -0.900 0.368785
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## p5l17_103                      3.845e+09  1.173e+10   0.328 0.743317
## p5l17_104                      8.971e+09  6.823e+09   1.315 0.189315
## cp5pint                       -5.087e+12  5.172e+12  -0.983 0.325935
## p5qlang                       -8.791e+10  7.180e+10  -1.224 0.221505
## p5q1a                         -1.056e+10  5.847e+09  -1.807 0.071526 .
## p5q1b                          5.929e+09  3.939e+09   1.505 0.133077
## p5q1c                         -1.772e+09  1.840e+09  -0.963 0.336075
## p5q1d                         -8.644e+08  3.146e+09  -0.275 0.783635
## p5q1e                          5.674e+09  4.117e+09   1.378 0.168886
## p5q1f                          1.126e+09  4.208e+09   0.268 0.789214
## p5q1g                         -2.446e+09  2.555e+09  -0.957 0.339094
## p5q1h                         -4.188e+09  3.516e+09  -1.191 0.234326
## p5q1i                         -1.115e+09  3.332e+09  -0.335 0.738158
## p5q1j                          2.264e+09  2.268e+09   0.999 0.318570
## p5q1k                          4.497e+08  4.088e+09   0.110 0.912459
## p5q1l                         -7.760e+08  5.914e+09  -0.131 0.895678
## p5q1m                          1.843e+09  1.890e+09   0.975 0.330137
## p5q1n                          6.836e+08  3.472e+09   0.197 0.844006
## p5q2a                         -2.338e+09  4.050e+09  -0.577 0.564011
## p5q2b                          7.285e+09  8.366e+09   0.871 0.384361
## p5q2c                         -1.024e+10  6.971e+09  -1.469 0.142612
## p5q2d                         -4.795e+09  4.368e+09  -1.098 0.272974
## p5q2e                          1.161e+10  7.979e+09   1.455 0.146299
## p5q3a                          1.295e+10  1.520e+10   0.852 0.394694
## p5q3b                          6.677e+09  2.281e+10   0.293 0.769901
## p5q3c                         -1.150e+10  5.485e+09  -2.097 0.036642 *
## p5q3d                          1.652e+09  1.524e+10   0.108 0.913705
## p5q3e                         -3.909e+10  3.338e+10  -1.171 0.242268
## p5q3f                          1.267e+10  1.349e+10   0.940 0.347934
## p5q3g                          1.766e+10  1.126e+10   1.568 0.117552
## p5q3h                          9.102e+09  9.885e+09   0.921 0.357681
## p5q3i                         -6.280e+09  1.073e+10  -0.585 0.558575
## p5q3j                         -6.663e+09  6.808e+09  -0.979 0.328312
## p5q3k                         -2.505e+10  2.836e+10  -0.883 0.377703
## p5q3l                          3.564e+09  2.157e+10   0.165 0.868826
## p5q3m                         -7.399e+09  2.940e+10  -0.252 0.801403
## p5q3n                          9.103e+09  1.216e+10   0.749 0.454360
## p5q3o                          1.658e+10  8.491e+09   1.953 0.051524 .
## p5q3p                          2.872e+10  1.747e+10   1.644 0.100948
## p5q3q                         -1.246e+10  5.572e+10  -0.224 0.823087
## p5q3r                         -5.209e+08  3.751e+09  -0.139 0.889638
## p5q3s                         -3.003e+10  1.689e+10  -1.778 0.076064 .
## p5q3t                         -7.029e+09  1.994e+10  -0.352 0.724645
## p5q3u                          8.983e+09  1.618e+10   0.555 0.578960
## p5q3v                          5.830e+09  1.107e+10   0.526 0.598860
## p5q3w                         -4.871e+09  1.235e+10  -0.394 0.693590
## p5q3x                          3.204e+10  1.858e+10   1.724 0.085467 .
## p5q3y                         -9.283e+09  2.130e+10  -0.436 0.663141
## p5q3aa                        -1.437e+09  1.334e+10  -0.108 0.914241
## p5q3ab                        -1.974e+10  1.096e+10  -1.801 0.072358 .
## p5q3ac                         8.981e+09  4.801e+10   0.187 0.851707
## p5q3ad                         4.983e+09  1.081e+10   0.461 0.645196
## p5q3ae                         1.774e+10  1.144e+10   1.551 0.121680
## p5q3af                         3.633e+10  2.410e+10   1.508 0.132368
```

```
## p5q3ag                      -2.493e+10  2.995e+10  -0.832 0.405780
## p5q3ah                       4.066e+10  4.848e+10   0.839 0.402209
## p5q3ai                      -4.107e+09  1.395e+10  -0.294 0.768582
## p5q3aj                      -2.033e+10  1.523e+10  -1.335 0.182558
## p5q3ak                      -2.112e+10  1.278e+10  -1.653 0.099050 .
## p5q3al                      -3.260e+10  2.781e+10  -1.172 0.241753
## p5q3am                      -1.246e+10  2.949e+10  -0.422 0.672899
## p5q3an                       5.369e+09  1.234e+10   0.435 0.663632
## p5q3ao                      -2.111e+10  1.680e+10  -1.256 0.209690
## p5q3ap                      -1.553e+10  1.804e+10  -0.861 0.389786
## p5q3aq                      -2.122e+10  2.665e+10  -0.796 0.426340
## p5q3ar                       3.033e+10  2.093e+10   1.449 0.148193
## p5q3as                      -5.810e+09  1.260e+10  -0.461 0.644866
## p5q3at                       5.363e+10  2.865e+10   1.872 0.061897 .
## p5q3au                       2.619e+10  2.183e+10   1.200 0.230933
## p5q3av                       2.193e+10  1.293e+10   1.696 0.090584 .
## p5q3aw                      -2.175e+10  4.048e+10  -0.537 0.591315
## p5q3ax                       2.155e+10  2.013e+10   1.070 0.285134
## p5q3ay                      -2.258e+10  1.244e+10  -1.814 0.070375 .
## p5q3az                      -2.285e+10  2.141e+10  -1.067 0.286440
## p5q3ba                      -1.447e+10  1.225e+10  -1.181 0.238434
## p5q3bb1                     -6.363e+09  2.936e+10  -0.217 0.828538
## p5q3bb2                     -7.246e+09  1.225e+10  -0.591 0.554596
## p5q3bb3                     -7.871e+09  1.636e+10  -0.481 0.630615
## p5q3bb4                     -9.176e+09  8.233e+09  -1.115 0.265681
## p5q3bb5                     -3.725e+10  2.370e+10  -1.572 0.116735
## p5q3bb6                      6.443e+09  1.114e+10   0.578 0.563441
## p5q3bb7                      2.833e+10  2.225e+10   1.273 0.203603
## p5q3bb8                      5.261e+10  3.850e+10   1.366 0.172566
## p5q3bc                      -9.958e+09  1.508e+10  -0.660 0.509322
## p5q3bd                       2.183e+10  2.808e+10   0.777 0.437393
## p5q3be                       1.658e+10  6.766e+10   0.245 0.806491
## p5q3bf                      -5.799e+10  5.477e+10  -1.059 0.290254
## p5q3bg                       1.666e+10  1.436e+10   1.160 0.246676
## p5q3bh                      -3.586e+10  4.200e+10  -0.854 0.393718
## p5q3bi                       3.169e+09  1.548e+10   0.205 0.837942
## p5q3bj                       1.484e+10  8.202e+09   1.810 0.071048 .
## p5q3bk                       2.504e+10  3.943e+10   0.635 0.525746
## p5q3bl                      -1.989e+09  1.836e+10  -0.108 0.913766
## p5q3bm                      -6.484e+10  5.186e+10  -1.250 0.211913
## p5q3bn                       6.945e+09  1.950e+10   0.356 0.721892
## p5q3bo                      -4.496e+09  1.824e+10  -0.246 0.805462
## p5q3bp                      -2.197e+10  6.656e+10  -0.330 0.741504
## p5q3bq                       2.666e+10  1.919e+10   1.389 0.165487
## p5q3br                       6.447e+10  3.709e+10   1.738 0.082937 .
## p5q3bs                       4.724e+10  6.922e+10   0.682 0.495320
## p5q3bt                      -4.468e+09  1.064e+10  -0.420 0.674624
## p5q3bu                      -1.022e+10  9.644e+09  -1.060 0.289672
## p5q3bv                      -3.357e+10  2.023e+10  -1.659 0.097889 .
## p5q3bw                      -1.669e+10  1.530e+10  -1.091 0.275831
## p5q3bx                       1.561e+10  1.312e+10   1.189 0.234945
## p5q3by                      -5.910e+10  3.896e+10  -1.517 0.130009
## p5q3bz                      -3.362e+10  2.706e+10  -1.243 0.214711
## p5q3ca                       2.679e+10  3.732e+10   0.718 0.473301
```

```
## p5q3cb                   4.055e+09  7.017e+09   0.578 0.563691
## p5q3cd                  -1.091e+09  3.062e+10  -0.036 0.971598
## p5q3ce                   2.338e+10  1.515e+10   1.543 0.123624
## p5q3cf                   8.506e+09  1.207e+10   0.705 0.481236
## p5q3cg                   2.125e+10  1.633e+10   1.302 0.193752
## p5q3ch                  -2.383e+10  1.553e+10  -1.534 0.125693
## p5q3ci                   2.884e+10  2.597e+10   1.111 0.267408
## p5q3cj                  -4.819e+09  2.033e+10  -0.237 0.812737
## p5q3ck                   3.675e+10  4.121e+10   0.892 0.373037
## p5q3cl                   9.340e+09  2.433e+10   0.384 0.701229
## p5q3cm                  -9.908e+09  1.255e+10  -0.789 0.430314
## p5q3cn                   1.603e+10  2.312e+10   0.693 0.488418
## p5q3co                  -1.524e+07  2.382e+10  -0.001 0.999490
## p5q3cp                   3.663e+10  7.108e+10   0.515 0.606530
## p5q3cq                   1.194e+10  2.934e+10   0.407 0.684212
## p5q3cr                   1.559e+10  4.182e+10   0.373 0.709464
## p5q3cs                   2.036e+10  2.821e+10   0.722 0.470765
## p5q3ct                  -2.332e+10  7.569e+10  -0.308 0.758164
## p5q3cu                  -9.971e+09  2.329e+10  -0.428 0.668785
## p5q3cv                  -3.400e+10  2.844e+10  -1.195 0.232635
## p5q3cw                  -3.688e+09  4.284e+09  -0.861 0.389742
## p5q3cx                   3.603e+10  6.935e+10   0.520 0.603684
## p5q3cy                  -4.409e+10  3.681e+10  -1.198 0.231662
## p5q3cz                  -1.228e+10  1.913e+10  -0.642 0.521295
## p5q3da                   2.917e+10  2.026e+10   1.440 0.150582
## p5q3db                  -6.881e+07  1.419e+10  -0.005 0.996134
## p5q3dc                  -1.403e+10  1.144e+10  -1.227 0.220544
## p5q3dd                   8.224e+09  1.507e+10   0.546 0.585624
## p5q3de                  -8.572e+09  6.787e+09  -1.263 0.207277
## p5q3df                  -1.287e+10  1.454e+10  -0.885 0.376564
## p5q3dg                   1.490e+09  4.460e+09   0.334 0.738550
## p5q3dh                  -7.223e+09  6.762e+09  -1.068 0.286109
## p5q3di                   1.224e+10  9.463e+09   1.293 0.196616
## p5q3dj                  -6.107e+09  9.616e+09  -0.635 0.525702
## p5q3dk                   8.490e+09  1.245e+10   0.682 0.495547
## p5q3dl                   1.443e+10  1.712e+10   0.843 0.399841
## p5q3dm                  -6.218e+09  1.165e+10  -0.534 0.593675
## p5q3dn                  -7.718e+09  7.823e+09  -0.987 0.324401
## p5q3do                  -4.783e+09  5.918e+09  -0.808 0.419375
## p5q4a                    8.556e+10  7.368e+10   1.161 0.246220
## p5q4                    -2.428e+10  2.179e+10  -1.114 0.265988
## hv5_6                    1.287e+10  1.801e+10   0.714 0.475338
## hv5_12                   4.023e+09  6.019e+09   0.668 0.504272
## hv5_13                  -1.909e+10  1.253e+10  -1.523 0.128418
## hv5_dsae<6:2             8.398e+10  9.035e+10   0.929 0.353187
## hv5_dsae>16:10           9.812e+10  8.345e+10   1.176 0.240370
## hv5_dsae10:10            7.125e+10  8.699e+10   0.819 0.413225
## hv5_dsae10:2             5.133e+10  5.654e+10   0.908 0.364506
## hv5_dsae13:6             7.958e+10  5.582e+10   1.426 0.154727
## hv5_dsae15:10            1.013e+11  8.092e+10   1.252 0.211180
## hv5_dsae16:6             1.290e+11  9.044e+10   1.426 0.154687
## hv5_dsae6:2              1.016e+11  9.415e+10   1.079 0.281178
## hv5_dsae7:2              6.303e+10  5.761e+10   1.094 0.274512
## hv5_dsae8:10             1.109e+11  8.586e+10   1.291 0.197321
```

```
## hv5_dsae8:2          9.992e+10  7.434e+10   1.344 0.179627
## ihostat             -1.410e+09  1.074e+09  -1.313 0.190026
## hv5_10               1.081e+10  6.614e+09   1.634 0.102977
## o5a1                -2.523e+09  1.103e+10  -0.229 0.819265
## o5a2                 1.400e+10  1.219e+10   1.149 0.251276
## o5a3                -3.175e+10  3.451e+10  -0.920 0.358112
## o5a4                 7.437e+09  1.327e+10   0.561 0.575349
## o5a5                 1.284e+10  1.083e+10   1.186 0.236349
## o5a6a                5.167e+08  1.180e+09   0.438 0.661634
## o5a6b                1.379e+10  3.462e+10   0.398 0.690602
## o5a6c                5.590e+08  1.636e+10   0.034 0.972758
## o5a6d               -1.206e+09  1.542e+10  -0.078 0.937687
## o5a6e               -9.249e+09  4.954e+09  -1.867 0.062611 .
## o5a6f               -1.880e+10  3.806e+10  -0.494 0.621604
## o5a7a                2.282e+10  1.296e+10   1.760 0.079142 .
## o5a7b               -8.543e+09  1.582e+10  -0.540 0.589367
## o5a7c                3.733e+09  3.250e+09   1.149 0.251407
## o5a8                -1.655e+09  1.067e+09  -1.552 0.121454
## o5a9                -2.642e+09  7.128e+09  -0.371 0.711060
## o5b1                -3.725e+10  5.573e+10  -0.668 0.504300
## o5b2                 2.714e+10  5.689e+10   0.477 0.633617
## o5b3                 3.510e+10  1.456e+11   0.241 0.809668
## o5b4                -2.485e+10  1.418e+11  -0.175 0.860995
## o5c1                 5.374e+09  1.147e+10   0.469 0.639657
## o5c2                 1.598e+10  1.873e+10   0.854 0.393862
## o5c3                 4.402e+09  1.225e+10   0.359 0.719537
## o5c4                -6.216e+08  2.210e+10  -0.028 0.977579
## o5c5                -3.142e+10  1.858e+10  -1.690 0.091693 .
## o5c6                 8.220e+08  1.794e+10   0.046 0.963486
## o5c7                 4.897e+09  8.417e+09   0.582 0.560987
## o5c8                -3.174e+09  2.869e+09  -1.106 0.269237
## o5c9                        NA         NA      NA       NA
## o5c10                       NA         NA      NA       NA
## o5c11                       NA         NA      NA       NA
## o5c12                       NA         NA      NA       NA
## o5c13                       NA         NA      NA       NA
## o5c14                       NA         NA      NA       NA
## o5d2                        NA         NA      NA       NA
## o5d3                        NA         NA      NA       NA
## o5d4                        NA         NA      NA       NA
## o5d5                        NA         NA      NA       NA
## o5e1                        NA         NA      NA       NA
## o5e2                        NA         NA      NA       NA
## o5e3                        NA         NA      NA       NA
## o5e4                        NA         NA      NA       NA
## o5e5                        NA         NA      NA       NA
## o5e6                        NA         NA      NA       NA
## o5e7                        NA         NA      NA       NA
## o5e8                        NA         NA      NA       NA
## o5e9                        NA         NA      NA       NA
## o5e10                       NA         NA      NA       NA
## o5e11                       NA         NA      NA       NA
## o5e12                       NA         NA      NA       NA
## o5e13                       NA         NA      NA       NA
```

```
## o5e14                                     NA         NA        NA          NA
## o5e15                                     NA         NA        NA          NA
## o5e16                                     NA         NA        NA          NA
## o5e17                                     NA         NA        NA          NA
## o5e18a                                    NA         NA        NA          NA
## o5e18b                                    NA         NA        NA          NA
## o5e18c                                    NA         NA        NA          NA
## o5e18d                                    NA         NA        NA          NA
## o5e18e                                    NA         NA        NA          NA
## o5e18f                                    NA         NA        NA          NA
## o5e18g                                    NA         NA        NA          NA
## o5e18h                                    NA         NA        NA          NA
## o5e18i                                    NA         NA        NA          NA
## o5f1                                      NA         NA        NA          NA
## o5f2                                      NA         NA        NA          NA
## o5f3                                      NA         NA        NA          NA
## o5f4                                      NA         NA        NA          NA
## o5f5                                      NA         NA        NA          NA
## o5f6                                      NA         NA        NA          NA
## o5f7                                      NA         NA        NA          NA
## o5f8                                      NA         NA        NA          NA
## o5f9                                      NA         NA        NA          NA
## o5f10                                     NA         NA        NA          NA
## o5f11                                     NA         NA        NA          NA
## o5g1                                      NA         NA        NA          NA
## o5g2                                      NA         NA        NA          NA
## o5g3                                      NA         NA        NA          NA
## o5g4                                      NA         NA        NA          NA
## o5g5                                4.592e+09  6.661e+09     0.689 0.490980
## o5g6a                                     NA         NA        NA          NA
## o5g6b                                     NA         NA        NA          NA
## o5g6c                                     NA         NA        NA          NA
## o5g6d                                     NA         NA        NA          NA
## o5g6e                                     NA         NA        NA          NA
## o5g7                                      NA         NA        NA          NA
## o5FamAtCA                                 NA         NA        NA          NA
## o5FamAtCI                                 NA         NA        NA          NA
## o5FamAtInt                                NA         NA        NA          NA
## o5d1_1                                    NA         NA        NA          NA
## o5d1_2                                    NA         NA        NA          NA
## o5d1_3                                    NA         NA        NA          NA
## o5d1_4                                    NA         NA        NA          NA
## o5d1_5                                    NA         NA        NA          NA
## o5d1_6                                    NA         NA        NA          NA
## o5d1_7                                    NA         NA        NA          NA
## o5d1_8                                    NA         NA        NA          NA
## o5d1_10                                   NA         NA        NA          NA
## o5d1_91                                   NA         NA        NA          NA
## o5g8_1                                    NA         NA        NA          NA
## o5g8_2                                    NA         NA        NA          NA
## o5g8_3                                    NA         NA        NA          NA
## o5oint                                    NA         NA        NA          NA
## hv5_9                                     NA         NA        NA          NA
## hv5_11                                    NA         NA        NA          NA
```

```
## hv5_11b                       NA        NA      NA       NA
## hv5_cflag                      NA        NA      NA       NA
## hv5_8                          NA        NA      NA       NA
## hv5_8a3                        NA        NA      NA       NA
## hv5_selfht                     NA        NA      NA       NA
## hv5_selfwt                     NA        NA      NA       NA
## hv5_mflag                      NA        NA      NA       NA
## ck5saliva              -7.930e-02  7.622e-02  -1.040 0.298738
## t5a4                           NA        NA      NA       NA
## t5a6                           NA        NA      NA       NA
## t5a9a                          NA        NA      NA       NA
## t5a9b                          NA        NA      NA       NA
## t5a9c                          NA        NA      NA       NA
## t5a9d                          NA        NA      NA       NA
## t5a9e                          NA        NA      NA       NA
## t5a9f                          NA        NA      NA       NA
## t5a9g                          NA        NA      NA       NA
## t5a9h                          NA        NA      NA       NA
## t5a9i                          NA        NA      NA       NA
## t5a9j                          NA        NA      NA       NA
## t5a9k                          NA        NA      NA       NA
## t5a9l                          NA        NA      NA       NA
## t5a9m                          NA        NA      NA       NA
## t5a9n                          NA        NA      NA       NA
## t5a9o                          NA        NA      NA       NA
## t5a9p                          NA        NA      NA       NA
## t5a9q                          NA        NA      NA       NA
## t5a9r                          NA        NA      NA       NA
## t5a10                          NA        NA      NA       NA
## t5b1a                          NA        NA      NA       NA
## t5b1b                          NA        NA      NA       NA
## t5b1c                          NA        NA      NA       NA
## t5b1d                          NA        NA      NA       NA
## t5b1e                          NA        NA      NA       NA
## t5b1f                          NA        NA      NA       NA
## t5b1g                          NA        NA      NA       NA
## t5b1h                          NA        NA      NA       NA
## t5b1i                          NA        NA      NA       NA
## t5b1j                          NA        NA      NA       NA
## t5b1k                          NA        NA      NA       NA
## t5b1l                          NA        NA      NA       NA
## t5b1m                          NA        NA      NA       NA
## t5b1n                          NA        NA      NA       NA
## t5b1o                          NA        NA      NA       NA
## t5b1p                          NA        NA      NA       NA
## t5b1q                          NA        NA      NA       NA
## t5b1r                          NA        NA      NA       NA
## t5b1s                          NA        NA      NA       NA
## t5b1t                          NA        NA      NA       NA
## t5b1u                          NA        NA      NA       NA
## t5b1v                          NA        NA      NA       NA
## t5b1w                          NA        NA      NA       NA
## t5b1x                          NA        NA      NA       NA
## t5b1y                          NA        NA      NA       NA
```

```
## t5b1z                          NA        NA        NA        NA
## t5b1aa                         NA        NA        NA        NA
## t5b1ab                         NA        NA        NA        NA
## t5b1ac                         NA        NA        NA        NA
## t5b1ad                         NA        NA        NA        NA
## t5b2a                          NA        NA        NA        NA
## t5b2b                          NA        NA        NA        NA
## t5b2c                          NA        NA        NA        NA
## t5b2d                          NA        NA        NA        NA
## t5b2e                          NA        NA        NA        NA
## t5b2f                          NA        NA        NA        NA
## t5b2g                          NA        NA        NA        NA
## t5b3a                          NA        NA        NA        NA
## t5b3b                          NA        NA        NA        NA
## t5b3c                          NA        NA        NA        NA
## t5b3d                          NA        NA        NA        NA
## t5b3e                          NA        NA        NA        NA
## t5b3f                          NA        NA        NA        NA
## t5b3g                          NA        NA        NA        NA
## t5b3h                          NA        NA        NA        NA
## t5b3i                          NA        NA        NA        NA
## t5b3j                          NA        NA        NA        NA
## t5b3k                          NA        NA        NA        NA
## t5b3l                          NA        NA        NA        NA
## t5b4a                          NA        NA        NA        NA
## t5b4b                          NA        NA        NA        NA
## t5b4c                          NA        NA        NA        NA
## t5b4d                          NA        NA        NA        NA
## t5b4e                          NA        NA        NA        NA
## t5b4f                          NA        NA        NA        NA
## t5b4g                          NA        NA        NA        NA
## t5b4h                          NA        NA        NA        NA
## t5b4i                          NA        NA        NA        NA
## t5b4j                          NA        NA        NA        NA
## t5b4k                          NA        NA        NA        NA
## t5b4l                          NA        NA        NA        NA
## t5b4m                          NA        NA        NA        NA
## t5b4n                          NA        NA        NA        NA
## t5b4o                          NA        NA        NA        NA
## t5b4p                          NA        NA        NA        NA
## t5b4q                          NA        NA        NA        NA
## t5b4r                          NA        NA        NA        NA
## t5b4s                          NA        NA        NA        NA
## t5b4t                          NA        NA        NA        NA
## t5b4u                          NA        NA        NA        NA
## t5b4v                          NA        NA        NA        NA
## t5b4w                          NA        NA        NA        NA
## t5b4x                          NA        NA        NA        NA
## t5b4y                          NA        NA        NA        NA
## t5b4z                          NA        NA        NA        NA
## t5b4aa                         NA        NA        NA        NA
## t5b4ab                         NA        NA        NA        NA
## t5c1                           NA        NA        NA        NA
## t5c5                           NA        NA        NA        NA
```

```
## t5c6                                   NA      NA      NA      NA
## t5c7a                                  NA      NA      NA      NA
## t5c7b                                  NA      NA      NA      NA
## t5c7c                                  NA      NA      NA      NA
## t5c7d                                  NA      NA      NA      NA
## t5c7e                                  NA      NA      NA      NA
## t5c7f                                  NA      NA      NA      NA
## t5c7g                                  NA      NA      NA      NA
## t5c7h                                  NA      NA      NA      NA
## t5c7i                                  NA      NA      NA      NA
## t5c7j                                  NA      NA      NA      NA
## t5c7k                                  NA      NA      NA      NA
## t5c7l                                  NA      NA      NA      NA
## t5c7m                                  NA      NA      NA      NA
## t5c7n                                  NA      NA      NA      NA
## t5c7o                                  NA      NA      NA      NA
## t5c7p                                  NA      NA      NA      NA
## t5c8a                                  NA      NA      NA      NA
## t5c8b                                  NA      NA      NA      NA
## t5c8c                                  NA      NA      NA      NA
## t5c9                                   NA      NA      NA      NA
## t5c10                                  NA      NA      NA      NA
## t5c11                                  NA      NA      NA      NA
## t5c12                                  NA      NA      NA      NA
## t5c13a                                 NA      NA      NA      NA
## t5c13b                                 NA      NA      NA      NA
## t5c13c                                 NA      NA      NA      NA
## t5c14                                  NA      NA      NA      NA
## t5c15                                  NA      NA      NA      NA
## t5c16                                  NA      NA      NA      NA
## t5c17                                  NA      NA      NA      NA
## t5d1a                                  NA      NA      NA      NA
## t5d1b                                  NA      NA      NA      NA
## t5d1c                                  NA      NA      NA      NA
## t5d1d                                  NA      NA      NA      NA
## t5d1e                                  NA      NA      NA      NA
## t5d2                                   NA      NA      NA      NA
## t5d3                                   NA      NA      NA      NA
## t5d4                                   NA      NA      NA      NA
## t5d5                                   NA      NA      NA      NA
## t5d6                                   NA      NA      NA      NA
## t5d7                                   NA      NA      NA      NA
## t5d8a                                  NA      NA      NA      NA
## t5d8b                                  NA      NA      NA      NA
## t5e2                                   NA      NA      NA      NA
## t5e3                                   NA      NA      NA      NA
## t5e4a                                  NA      NA      NA      NA
## t5e4b                                  NA      NA      NA      NA
## t5e4c                                  NA      NA      NA      NA
## t5e4d                                  NA      NA      NA      NA
## t5e5                                   NA      NA      NA      NA
## t5e6                                   NA      NA      NA      NA
## t5e8                                   NA      NA      NA      NA
## t5e9a                                  NA      NA      NA      NA
```

```
## t5e9b                           NA        NA        NA        NA
## t5e9c                           NA        NA        NA        NA
## t5e9d                           NA        NA        NA        NA
## t5e10a1                         NA        NA        NA        NA
## t5e10a2                         NA        NA        NA        NA
## t5e10b1                         NA        NA        NA        NA
## t5e10b2                         NA        NA        NA        NA
## t5e11                           NA        NA        NA        NA
## t5e15a                          NA        NA        NA        NA
## t5e15b                          NA        NA        NA        NA
## t5e15c                          NA        NA        NA        NA
## t5e15d                          NA        NA        NA        NA
## t5e15e                          NA        NA        NA        NA
## t5e15f                          NA        NA        NA        NA
## t5e16a                          NA        NA        NA        NA
## t5e16b                          NA        NA        NA        NA
## t5e16c                          NA        NA        NA        NA
## t5e17a                          NA        NA        NA        NA
## t5e17b                          NA        NA        NA        NA
## t5e17c                          NA        NA        NA        NA
## t5e18a                          NA        NA        NA        NA
## t5e18b                          NA        NA        NA        NA
## t5e18c                          NA        NA        NA        NA
## t5e18d                          NA        NA        NA        NA
## t5e18e                          NA        NA        NA        NA
## t5e18f                          NA        NA        NA        NA
## t5e19a                          NA        NA        NA        NA
## t5e19b                          NA        NA        NA        NA
## t5e19c                          NA        NA        NA        NA
## t5e19d                          NA        NA        NA        NA
## t5e19e                          NA        NA        NA        NA
## t5e19f                          NA        NA        NA        NA
## t5e21                           NA        NA        NA        NA
## t5e22a                          NA        NA        NA        NA
## t5e22b                          NA        NA        NA        NA
## t5e22c                          NA        NA        NA        NA
## t5e22d                          NA        NA        NA        NA
## t5f1a                           NA        NA        NA        NA
## t5f1b                           NA        NA        NA        NA
## t5f1c                           NA        NA        NA        NA
## t5f1d                           NA        NA        NA        NA
## t5f1e                           NA        NA        NA        NA
## t5f1f                           NA        NA        NA        NA
## t5f2                            NA        NA        NA        NA
## t5f3                            NA        NA        NA        NA
## t5f4a                           NA        NA        NA        NA
## t5f4b                           NA        NA        NA        NA
## t5f4c                           NA        NA        NA        NA
## t5f4d                           NA        NA        NA        NA
## t5f5a                           NA        NA        NA        NA
## t5f5b                           NA        NA        NA        NA
## t5f5c                           NA        NA        NA        NA
## t5f5d                           NA        NA        NA        NA
## t5f5e                           NA        NA        NA        NA
```

```
## t5f5f                    NA      NA      NA      NA
## t5f5g                    NA      NA      NA      NA
## t5a2b                    NA      NA      NA      NA
## t5e7_1                   NA      NA      NA      NA
## t5e7_2                   NA      NA      NA      NA
## t5e7_3                   NA      NA      NA      NA
## t5e7_4                   NA      NA      NA      NA
## t5e7_101                 NA      NA      NA      NA
## t5e14_1                  NA      NA      NA      NA
## t5e14_2                  NA      NA      NA      NA
## t5e14_3                  NA      NA      NA      NA
## t5e14_4                  NA      NA      NA      NA
## t5e14_101                NA      NA      NA      NA
## t5e14_102                NA      NA      NA      NA
## t5e14_103                NA      NA      NA      NA
## t5e14_104                NA      NA      NA      NA
## t5e14_105                NA      NA      NA      NA
## t5e14_106                NA      NA      NA      NA
## t5a11_1                  NA      NA      NA      NA
## t5a11_2                  NA      NA      NA      NA
## t5a11_3                  NA      NA      NA      NA
## t5a11_4                  NA      NA      NA      NA
## t5a11_5                  NA      NA      NA      NA
## t5a11_101                NA      NA      NA      NA
## t5a11_102                NA      NA      NA      NA
## t5a11_103                NA      NA      NA      NA
## t5a11_104                NA      NA      NA      NA
## t5a11_105                NA      NA      NA      NA
## t5a11_106                NA      NA      NA      NA
## t5a11_107                NA      NA      NA      NA
## t5c3_1                   NA      NA      NA      NA
## t5c3_2                   NA      NA      NA      NA
## t5c3_3                   NA      NA      NA      NA
## t5c3_4                   NA      NA      NA      NA
## t5c3_5                   NA      NA      NA      NA
## t5c3_6                   NA      NA      NA      NA
## t5c3_7                   NA      NA      NA      NA
## t5c3_8                   NA      NA      NA      NA
## t5c3_9                   NA      NA      NA      NA
## t5c3_10                  NA      NA      NA      NA
## t5c3_11                  NA      NA      NA      NA
## t5c3_12                  NA      NA      NA      NA
## t5c3_13                  NA      NA      NA      NA
## t5c3_14                  NA      NA      NA      NA
## t5c3_15                  NA      NA      NA      NA
## t5c3_16                  NA      NA      NA      NA
## t5status                 NA      NA      NA      NA
## t5tint                   NA      NA      NA      NA
## cf5tele                  NA      NA      NA      NA
## cf5span                  NA      NA      NA      NA
## cf5new108                NA      NA      NA      NA
## cf5marp                  NA      NA      NA      NA
## cf5marm                  NA      NA      NA      NA
## cf5cohm                  NA      NA      NA      NA
```

```
## cf5cohp                            NA        NA      NA      NA
## cm5natsm                           NA        NA      NA      NA
## cf5natsm                           NA        NA      NA      NA
## cm5citsm                           NA        NA      NA      NA
## cf5citsm                           NA        NA      NA      NA
## cf5twoc                            NA        NA      NA      NA
## cm5finjail                         NA        NA      NA      NA
## cm5fevjail                         NA        NA      NA      NA
## cf5finjail                         NA        NA      NA      NA
## cf5fevjail                         NA        NA      NA      NA
## cm5edu                             NA        NA      NA      NA
## cf5edu                             NA        NA      NA      NA
## cm5hhimp                           NA        NA      NA      NA
## cf5hhimp                           NA        NA      NA      NA
## cf5hhimpb                          NA        NA      NA      NA
## cm5povca                           NA        NA      NA      NA
## cf5povca                           NA        NA      NA      NA
## cf5povcab                          NA        NA      NA      NA
## cf5samp                     -2.282e-02  3.048e-02  -0.749 0.454508
## m5a3                        -1.581e+10  3.068e+10  -0.515 0.606496
## m5a4e2                             NA        NA      NA      NA
## m5a4g2                             NA        NA      NA      NA
## m5b12a                             NA        NA      NA      NA
## m5b16c                             NA        NA      NA      NA
## m5b17a                             NA        NA      NA      NA
## m5b18c                             NA        NA      NA      NA
## m5b21a                             NA        NA      NA      NA
## m5b30c                             NA        NA      NA      NA
## m5d2c2                             NA        NA      NA      NA
## m5d2e2                             NA        NA      NA      NA
## m5d2f1                             NA        NA      NA      NA
## m5d2f2                             NA        NA      NA      NA
## m5d3                               NA        NA      NA      NA
## m5f3                               NA        NA      NA      NA
## m5f4                               NA        NA      NA      NA
## m5f8c1                             NA        NA      NA      NA
## m5f8c2                             NA        NA      NA      NA
## m5f8c3                             NA        NA      NA      NA
## m5f14a                             NA        NA      NA      NA
## m5f18g                             NA        NA      NA      NA
## m5f23l                             NA        NA      NA      NA
## m5g2d1                             NA        NA      NA      NA
## m5g11a                             NA        NA      NA      NA
## m5g25b                             NA        NA      NA      NA
## m5g25c                             NA        NA      NA      NA
## m5i7                               NA        NA      NA      NA
## m5i14d                             NA        NA      NA      NA
## m5i19a                             NA        NA      NA      NA
## m5i24b                             NA        NA      NA      NA
## m5i24c                             NA        NA      NA      NA
## m5i24e                             NA        NA      NA      NA
## m5i26b                             NA        NA      NA      NA
## m5i26c                             NA        NA      NA      NA
## m5i26e                             NA        NA      NA      NA
```

```
## m5j1                        NA         NA      NA       NA
## m5j6b1                       NA         NA      NA       NA
## m5j9b1                       NA         NA      NA       NA
## f5a3                         NA         NA      NA       NA
## f5a3c                        NA         NA      NA       NA
## f5a3e               -3.828e+09   2.928e+09  -1.307 0.191773
## f5a3g               -2.780e+10   3.054e+10  -0.910 0.363265
## f5a4j2                        NA         NA      NA       NA
## f5a5c01                       NA         NA      NA       NA
## f5a5c02                       NA         NA      NA       NA
## f5a5d02                       NA         NA      NA       NA
## f5a5c03                       NA         NA      NA       NA
## f5a5d03                       NA         NA      NA       NA
## f5a5c04                       NA         NA      NA       NA
## f5a5c05                       NA         NA      NA       NA
## f5a5c06              -1.811e+10   2.313e+10  -0.783 0.434029
## f5a6c01                       NA         NA      NA       NA
## f5a6c02                       NA         NA      NA       NA
## f5a6c03                       NA         NA      NA       NA
## f5a6c04                       NA         NA      NA       NA
## f5a6c05                       NA         NA      NA       NA
## f5a6c06                       NA         NA      NA       NA
## f5b4x                5.696e+10   1.552e+11   0.367 0.713796
## f5b6x                         NA         NA      NA       NA
## f5b2c                         NA         NA      NA       NA
## f5b3b                         NA         NA      NA       NA
## f5b91                         NA         NA      NA       NA
## f5b12                         NA         NA      NA       NA
## f5b12a                        NA         NA      NA       NA
## f5b16c                        NA         NA      NA       NA
## f5b17a                        NA         NA      NA       NA
## f5b18c                        NA         NA      NA       NA
## f5b21a                        NA         NA      NA       NA
## f5b25                         NA         NA      NA       NA
## f5d2e2                        NA         NA      NA       NA
## f5d2f2               4.821e+10   3.848e+10   1.253 0.210969
## f5d3                          NA         NA      NA       NA
## f5d4y                         NA         NA      NA       NA
## f5e2b                         NA         NA      NA       NA
## f5f3                          NA         NA      NA       NA
## f5f3a                         NA         NA      NA       NA
## f5f3b                         NA         NA      NA       NA
## f5f4                          NA         NA      NA       NA
## f5f8c1                        NA         NA      NA       NA
## f5f8c2                        NA         NA      NA       NA
## f5f8c3                        NA         NA      NA       NA
## f5f18g                        NA         NA      NA       NA
## f5f23l                        NA         NA      NA       NA
## f5f28d               -2.627e+10   1.860e+10  -1.413 0.158467
## f5f28f                        NA         NA      NA       NA
## f5g11a                8.445e+09   6.983e+09   1.209 0.227224
## f5g35                         NA         NA      NA       NA
## f5i7                          NA         NA      NA       NA
## f5i8a                         NA         NA      NA       NA
```

```
## f5i9b                         NA        NA      NA        NA
## f5i10                         NA        NA      NA        NA
## f5i13                         NA        NA      NA        NA
## f5i14d                        NA        NA      NA        NA
## f5i18                         NA        NA      NA        NA
## f5i19a                        NA        NA      NA        NA
## f5i21                         NA        NA      NA        NA
## f5i24b                        NA        NA      NA        NA
## f5i24c                        NA        NA      NA        NA
## f5i24e                        NA        NA      NA        NA
## f5i26b                        NA        NA      NA        NA
## f5i26c                 -2.434e+09  2.160e+09  -1.127 0.260328
## f5i26e                        NA        NA      NA        NA
## f5j1                          NA        NA      NA        NA
## f5j2a                         NA        NA      NA        NA
## f5j6b1                        NA        NA      NA        NA
## f5j6c                         NA        NA      NA        NA
## f5j6e                         NA        NA      NA        NA
## f5j6g                         NA        NA      NA        NA
## f5j9b1                        NA        NA      NA        NA
## f5j9c                         NA        NA      NA        NA
## f5j9e                         NA        NA      NA        NA
## f5j9g                         NA        NA      NA        NA
## f5k7                          NA        NA      NA        NA
## f5k15a                        NA        NA      NA        NA
## f5k18                         NA        NA      NA        NA
## n5a2b                         NA        NA      NA        NA
## n5a8b                         NA        NA      NA        NA
## n5a17                  2.239e+09  2.237e+09   1.001 0.317596
## n5b2a                         NA        NA      NA        NA
## n5d2_age              -1.649e+11  1.534e+11  -1.075 0.283077
## n5d3c_2                       NA        NA      NA        NA
## n5d3c_3                       NA        NA      NA        NA
## n5d3c_4               -7.440e+10  8.021e+10  -0.928 0.354136
## n5d3c_5                       NA        NA      NA        NA
## n5d3c_6                       NA        NA      NA        NA
## n5e3                          NA        NA      NA        NA
## p5h9                          NA        NA      NA        NA
## p5h16a                        NA        NA      NA        NA
## p5i4                          NA        NA      NA        NA
## p5i6                          NA        NA      NA        NA
## p5i10a                        NA        NA      NA        NA
## p5i15                         NA        NA      NA        NA
## p5i25                         NA        NA      NA        NA
## p5i34                         NA        NA      NA        NA
## p5i43                         NA        NA      NA        NA
## p5j7                          NA        NA      NA        NA
## p5j9                          NA        NA      NA        NA
## p5j10                         NA        NA      NA        NA
## hv5_dspr                      NA        NA      NA        NA
## hv5_dsss                      NA        NA      NA        NA
## hv5_dsraw                     NA        NA      NA        NA
## hv5_ppvtae10-0                NA        NA      NA        NA
## hv5_ppvtae10-1                NA        NA      NA        NA
```

```
## hv5_ppvtae10-11              NA      NA      NA      NA
## hv5_ppvtae10-3               NA      NA      NA      NA
## hv5_ppvtae10-4               NA      NA      NA      NA
## hv5_ppvtae10-5               NA      NA      NA      NA
## hv5_ppvtae10-6               NA      NA      NA      NA
## hv5_ppvtae10-8               NA      NA      NA      NA
## hv5_ppvtae10-9               NA      NA      NA      NA
## hv5_ppvtae11-0               NA      NA      NA      NA
## hv5_ppvtae11-11              NA      NA      NA      NA
## hv5_ppvtae11-2               NA      NA      NA      NA
## hv5_ppvtae11-4               NA      NA      NA      NA
## hv5_ppvtae11-5               NA      NA      NA      NA
## hv5_ppvtae11-7               NA      NA      NA      NA
## hv5_ppvtae11-9               NA      NA      NA      NA
## hv5_ppvtae12-0               NA      NA      NA      NA
## hv5_ppvtae12-11              NA      NA      NA      NA
## hv5_ppvtae12-2               NA      NA      NA      NA
## hv5_ppvtae12-4               NA      NA      NA      NA
## hv5_ppvtae12-6               NA      NA      NA      NA
## hv5_ppvtae12-8               NA      NA      NA      NA
## hv5_ppvtae13-1               NA      NA      NA      NA
## hv5_ppvtae13-10              NA      NA      NA      NA
## hv5_ppvtae13-3               NA      NA      NA      NA
## hv5_ppvtae13-5               NA      NA      NA      NA
## hv5_ppvtae13-8               NA      NA      NA      NA
## hv5_ppvtae14-1               NA      NA      NA      NA
## hv5_ppvtae14-3               NA      NA      NA      NA
## hv5_ppvtae14-6               NA      NA      NA      NA
## hv5_ppvtae14-9               NA      NA      NA      NA
## hv5_ppvtae15-0               NA      NA      NA      NA
## hv5_ppvtae16-1               NA      NA      NA      NA
## hv5_ppvtae5-10               NA      NA      NA      NA
## hv5_ppvtae5-11               NA      NA      NA      NA
## hv5_ppvtae5-3                NA      NA      NA      NA
## hv5_ppvtae5-7                NA      NA      NA      NA
## hv5_ppvtae5-8                NA      NA      NA      NA
## hv5_ppvtae5-9                NA      NA      NA      NA
## hv5_ppvtae6-0                NA      NA      NA      NA
## hv5_ppvtae6-1                NA      NA      NA      NA
## hv5_ppvtae6-10               NA      NA      NA      NA
## hv5_ppvtae6-11               NA      NA      NA      NA
## hv5_ppvtae6-2                NA      NA      NA      NA
## hv5_ppvtae6-3                NA      NA      NA      NA
## hv5_ppvtae6-4                NA      NA      NA      NA
## hv5_ppvtae6-5                NA      NA      NA      NA
## hv5_ppvtae6-6                NA      NA      NA      NA
## hv5_ppvtae6-7                NA      NA      NA      NA
## hv5_ppvtae6-8                NA      NA      NA      NA
## hv5_ppvtae6-9                NA      NA      NA      NA
## hv5_ppvtae7-0                NA      NA      NA      NA
## hv5_ppvtae7-1                NA      NA      NA      NA
## hv5_ppvtae7-10               NA      NA      NA      NA
## hv5_ppvtae7-11               NA      NA      NA      NA
## hv5_ppvtae7-2                NA      NA      NA      NA
```

```
## hv5_ppvtae7-3                        NA       NA       NA       NA
## hv5_ppvtae7-4                        NA       NA       NA       NA
## hv5_ppvtae7-5                        NA       NA       NA       NA
## hv5_ppvtae7-6                        NA       NA       NA       NA
## hv5_ppvtae7-7                        NA       NA       NA       NA
## hv5_ppvtae7-8                        NA       NA       NA       NA
## hv5_ppvtae7-9                        NA       NA       NA       NA
## hv5_ppvtae8-0                        NA       NA       NA       NA
## hv5_ppvtae8-1                        NA       NA       NA       NA
## hv5_ppvtae8-10                       NA       NA       NA       NA
## hv5_ppvtae8-11                       NA       NA       NA       NA
## hv5_ppvtae8-2                        NA       NA       NA       NA
## hv5_ppvtae8-3                        NA       NA       NA       NA
## hv5_ppvtae8-4                        NA       NA       NA       NA
## hv5_ppvtae8-5                        NA       NA       NA       NA
## hv5_ppvtae8-6                        NA       NA       NA       NA
## hv5_ppvtae8-7                        NA       NA       NA       NA
## hv5_ppvtae8-8                        NA       NA       NA       NA
## hv5_ppvtae8-9                        NA       NA       NA       NA
## hv5_ppvtae9-0                        NA       NA       NA       NA
## hv5_ppvtae9-1                        NA       NA       NA       NA
## hv5_ppvtae9-11                       NA       NA       NA       NA
## hv5_ppvtae9-2                        NA       NA       NA       NA
## hv5_ppvtae9-3                        NA       NA       NA       NA
## hv5_ppvtae9-4                        NA       NA       NA       NA
## hv5_ppvtae9-6                        NA       NA       NA       NA
## hv5_ppvtae9-7                        NA       NA       NA       NA
## hv5_ppvtae9-8                        NA       NA       NA       NA
## hv5_ppvtae9-9                        NA       NA       NA       NA
## hv5_ppvtaeOther                      NA       NA       NA       NA
## hv5_ppvtpr0.3                        NA       NA       NA       NA
## hv5_ppvtpr1                          NA       NA       NA       NA
## hv5_ppvtpr10                         NA       NA       NA       NA
## hv5_ppvtpr12                         NA       NA       NA       NA
## hv5_ppvtpr13                         NA       NA       NA       NA
## hv5_ppvtpr14                         NA       NA       NA       NA
## hv5_ppvtpr16                         NA       NA       NA       NA
## hv5_ppvtpr18                         NA       NA       NA       NA
## hv5_ppvtpr19                         NA       NA       NA       NA
## hv5_ppvtpr2                          NA       NA       NA       NA
## hv5_ppvtpr21                         NA       NA       NA       NA
## hv5_ppvtpr23                         NA       NA       NA       NA
## hv5_ppvtpr25                         NA       NA       NA       NA
## hv5_ppvtpr27                         NA       NA       NA       NA
## hv5_ppvtpr3                          NA       NA       NA       NA
## hv5_ppvtpr30                         NA       NA       NA       NA
## hv5_ppvtpr32                         NA       NA       NA       NA
## hv5_ppvtpr34                         NA       NA       NA       NA
## hv5_ppvtpr37                         NA       NA       NA       NA
## hv5_ppvtpr39                         NA       NA       NA       NA
## hv5_ppvtpr4                          NA       NA       NA       NA
## hv5_ppvtpr42                         NA       NA       NA       NA
## hv5_ppvtpr45                         NA       NA       NA       NA
## hv5_ppvtpr47                         NA       NA       NA       NA
```

```
## hv5_ppvtpr5                       NA        NA      NA       NA
## hv5_ppvtpr50                      NA        NA      NA       NA
## hv5_ppvtpr53                      NA        NA      NA       NA
## hv5_ppvtpr55                      NA        NA      NA       NA
## hv5_ppvtpr58                      NA        NA      NA       NA
## hv5_ppvtpr6                       NA        NA      NA       NA
## hv5_ppvtpr61                      NA        NA      NA       NA
## hv5_ppvtpr63                      NA        NA      NA       NA
## hv5_ppvtpr66                      NA        NA      NA       NA
## hv5_ppvtpr68                      NA        NA      NA       NA
## hv5_ppvtpr7                       NA        NA      NA       NA
## hv5_ppvtpr70                      NA        NA      NA       NA
## hv5_ppvtpr73                      NA        NA      NA       NA
## hv5_ppvtpr75                      NA        NA      NA       NA
## hv5_ppvtpr77                      NA        NA      NA       NA
## hv5_ppvtpr79                      NA        NA      NA       NA
## hv5_ppvtpr8                       NA        NA      NA       NA
## hv5_ppvtpr81                      NA        NA      NA       NA
## hv5_ppvtpr82                      NA        NA      NA       NA
## hv5_ppvtpr84                      NA        NA      NA       NA
## hv5_ppvtpr86                      NA        NA      NA       NA
## hv5_ppvtpr87                      NA        NA      NA       NA
## hv5_ppvtpr88                      NA        NA      NA       NA
## hv5_ppvtpr9                       NA        NA      NA       NA
## hv5_ppvtpr90                      NA        NA      NA       NA
## hv5_ppvtpr91                      NA        NA      NA       NA
## hv5_ppvtpr92                      NA        NA      NA       NA
## hv5_ppvtpr93                      NA        NA      NA       NA
## hv5_ppvtpr94                      NA        NA      NA       NA
## hv5_ppvtpr95                      NA        NA      NA       NA
## hv5_ppvtpr96                      NA        NA      NA       NA
## hv5_ppvtpr97                      NA        NA      NA       NA
## hv5_ppvtpr98                      NA        NA      NA       NA
## hv5_ppvtpr99                      NA        NA      NA       NA
## hv5_ppvtprOther                   NA        NA      NA       NA
## hv5_ppvtss                 -5.018e+07  6.543e+08  -0.077 0.938904
## hv5_wj9ss                         NA        NA      NA       NA
## hv5_wj9pr<0.1                     NA        NA      NA       NA
## hv5_wj9pr0.3                      NA        NA      NA       NA
## hv5_wj9pr0.4                      NA        NA      NA       NA
## hv5_wj9pr0.5                      NA        NA      NA       NA
## hv5_wj9pr1                        NA        NA      NA       NA
## hv5_wj9pr10                       NA        NA      NA       NA
## hv5_wj9pr11                       NA        NA      NA       NA
## hv5_wj9pr12                       NA        NA      NA       NA
## hv5_wj9pr13                       NA        NA      NA       NA
## hv5_wj9pr14                       NA        NA      NA       NA
## hv5_wj9pr15                       NA        NA      NA       NA
## hv5_wj9pr16                       NA        NA      NA       NA
## hv5_wj9pr17                       NA        NA      NA       NA
## hv5_wj9pr18                       NA        NA      NA       NA
## hv5_wj9pr19                       NA        NA      NA       NA
## hv5_wj9pr2                        NA        NA      NA       NA
## hv5_wj9pr20                       NA        NA      NA       NA
```

45

```
## hv5_wj9pr21                          NA      NA      NA      NA
## hv5_wj9pr22                          NA      NA      NA      NA
## hv5_wj9pr23                          NA      NA      NA      NA
## hv5_wj9pr24                          NA      NA      NA      NA
## hv5_wj9pr25                          NA      NA      NA      NA
## hv5_wj9pr26                          NA      NA      NA      NA
## hv5_wj9pr27                          NA      NA      NA      NA
## hv5_wj9pr28                          NA      NA      NA      NA
## hv5_wj9pr29                          NA      NA      NA      NA
## hv5_wj9pr3                           NA      NA      NA      NA
## hv5_wj9pr30                          NA      NA      NA      NA
## hv5_wj9pr31                          NA      NA      NA      NA
## hv5_wj9pr32                          NA      NA      NA      NA
## hv5_wj9pr33                          NA      NA      NA      NA
## hv5_wj9pr34                          NA      NA      NA      NA
## hv5_wj9pr35                          NA      NA      NA      NA
## hv5_wj9pr36                          NA      NA      NA      NA
## hv5_wj9pr37                          NA      NA      NA      NA
## hv5_wj9pr38                          NA      NA      NA      NA
## hv5_wj9pr39                          NA      NA      NA      NA
## hv5_wj9pr4                           NA      NA      NA      NA
## hv5_wj9pr40                          NA      NA      NA      NA
## hv5_wj9pr41                          NA      NA      NA      NA
## hv5_wj9pr42                          NA      NA      NA      NA
## hv5_wj9pr43                          NA      NA      NA      NA
## hv5_wj9pr44                          NA      NA      NA      NA
## hv5_wj9pr45                          NA      NA      NA      NA
## hv5_wj9pr46                          NA      NA      NA      NA
## hv5_wj9pr47                          NA      NA      NA      NA
## hv5_wj9pr48                          NA      NA      NA      NA
## hv5_wj9pr49                          NA      NA      NA      NA
## hv5_wj9pr5                           NA      NA      NA      NA
## hv5_wj9pr50                          NA      NA      NA      NA
## hv5_wj9pr51                          NA      NA      NA      NA
## hv5_wj9pr52                          NA      NA      NA      NA
## hv5_wj9pr54                          NA      NA      NA      NA
## hv5_wj9pr55                          NA      NA      NA      NA
## hv5_wj9pr56                          NA      NA      NA      NA
## hv5_wj9pr57                          NA      NA      NA      NA
## hv5_wj9pr58                          NA      NA      NA      NA
## hv5_wj9pr59                          NA      NA      NA      NA
## hv5_wj9pr6                           NA      NA      NA      NA
## hv5_wj9pr60                          NA      NA      NA      NA
## hv5_wj9pr61                          NA      NA      NA      NA
## hv5_wj9pr62                          NA      NA      NA      NA
## hv5_wj9pr63                          NA      NA      NA      NA
## hv5_wj9pr64                          NA      NA      NA      NA
## hv5_wj9pr65                          NA      NA      NA      NA
## hv5_wj9pr66                          NA      NA      NA      NA
## hv5_wj9pr68                          NA      NA      NA      NA
## hv5_wj9pr69                          NA      NA      NA      NA
## hv5_wj9pr7                           NA      NA      NA      NA
## hv5_wj9pr70                          NA      NA      NA      NA
## hv5_wj9pr71                          NA      NA      NA      NA
```

```
## hv5_wj9pr72                     NA      NA      NA      NA
## hv5_wj9pr73                     NA      NA      NA      NA
## hv5_wj9pr75                     NA      NA      NA      NA
## hv5_wj9pr76                     NA      NA      NA      NA
## hv5_wj9pr77                     NA      NA      NA      NA
## hv5_wj9pr78                     NA      NA      NA      NA
## hv5_wj9pr79                     NA      NA      NA      NA
## hv5_wj9pr8                      NA      NA      NA      NA
## hv5_wj9pr80                     NA      NA      NA      NA
## hv5_wj9pr81                     NA      NA      NA      NA
## hv5_wj9pr82                     NA      NA      NA      NA
## hv5_wj9pr83                     NA      NA      NA      NA
## hv5_wj9pr84                     NA      NA      NA      NA
## hv5_wj9pr85                     NA      NA      NA      NA
## hv5_wj9pr86                     NA      NA      NA      NA
## hv5_wj9pr87                     NA      NA      NA      NA
## hv5_wj9pr88                     NA      NA      NA      NA
## hv5_wj9pr89                     NA      NA      NA      NA
## hv5_wj9pr9                      NA      NA      NA      NA
## hv5_wj9pr90                     NA      NA      NA      NA
## hv5_wj9pr91                     NA      NA      NA      NA
## hv5_wj9pr92                     NA      NA      NA      NA
## hv5_wj9pr93                     NA      NA      NA      NA
## hv5_wj9pr94                     NA      NA      NA      NA
## hv5_wj9pr95                     NA      NA      NA      NA
## hv5_wj9pr96                     NA      NA      NA      NA
## hv5_wj9pr97                     NA      NA      NA      NA
## hv5_wj9prOther                  NA      NA      NA      NA
## hv5_wj9ae<2-0                   NA      NA      NA      NA
## hv5_wj9ae10-2                   NA      NA      NA      NA
## hv5_wj9ae10-9                   NA      NA      NA      NA
## hv5_wj9ae11-6                   NA      NA      NA      NA
## hv5_wj9ae12-4                   NA      NA      NA      NA
## hv5_wj9ae13-4                   NA      NA      NA      NA
## hv5_wj9ae14-8                   NA      NA      NA      NA
## hv5_wj9ae16-11                  NA      NA      NA      NA
## hv5_wj9ae21                     NA      NA      NA      NA
## hv5_wj9ae6-1                    NA      NA      NA      NA
## hv5_wj9ae6-11                   NA      NA      NA      NA
## hv5_wj9ae6-2                    NA      NA      NA      NA
## hv5_wj9ae6-4                    NA      NA      NA      NA
## hv5_wj9ae6-5                    NA      NA      NA      NA
## hv5_wj9ae6-6                    NA      NA      NA      NA
## hv5_wj9ae6-7                    NA      NA      NA      NA
## hv5_wj9ae6-8                    NA      NA      NA      NA
## hv5_wj9ae6-9                    NA      NA      NA      NA
## hv5_wj9ae7-0                    NA      NA      NA      NA
## hv5_wj9ae7-1                    NA      NA      NA      NA
## hv5_wj9ae7-11                   NA      NA      NA      NA
## hv5_wj9ae7-2                    NA      NA      NA      NA
## hv5_wj9ae7-4                    NA      NA      NA      NA
## hv5_wj9ae7-5                    NA      NA      NA      NA
## hv5_wj9ae7-7                    NA      NA      NA      NA
## hv5_wj9ae7-9                    NA      NA      NA      NA
```

```
## hv5_wj9ae8-1          NA    NA    NA    NA
## hv5_wj9ae8-10         NA    NA    NA    NA
## hv5_wj9ae8-4          NA    NA    NA    NA
## hv5_wj9ae8-7          NA    NA    NA    NA
## hv5_wj9ae9-2          NA    NA    NA    NA
## hv5_wj9ae9-8          NA    NA    NA    NA
## hv5_wj9aeOther        NA    NA    NA    NA
## hv5_wj10ss            NA    NA    NA    NA
## hv5_wj10pr<0.1        NA    NA    NA    NA
## hv5_wj10pr0.3         NA    NA    NA    NA
## hv5_wj10pr0.4         NA    NA    NA    NA
## hv5_wj10pr0.5         NA    NA    NA    NA
## hv5_wj10pr1           NA    NA    NA    NA
## hv5_wj10pr10          NA    NA    NA    NA
## hv5_wj10pr11          NA    NA    NA    NA
## hv5_wj10pr12          NA    NA    NA    NA
## hv5_wj10pr13          NA    NA    NA    NA
## hv5_wj10pr14          NA    NA    NA    NA
## hv5_wj10pr15          NA    NA    NA    NA
## hv5_wj10pr16          NA    NA    NA    NA
## hv5_wj10pr17          NA    NA    NA    NA
## hv5_wj10pr18          NA    NA    NA    NA
## hv5_wj10pr19          NA    NA    NA    NA
## hv5_wj10pr2           NA    NA    NA    NA
## hv5_wj10pr20          NA    NA    NA    NA
## hv5_wj10pr21          NA    NA    NA    NA
## hv5_wj10pr22          NA    NA    NA    NA
## hv5_wj10pr23          NA    NA    NA    NA
## hv5_wj10pr24          NA    NA    NA    NA
## hv5_wj10pr25          NA    NA    NA    NA
## hv5_wj10pr26          NA    NA    NA    NA
## hv5_wj10pr27          NA    NA    NA    NA
## hv5_wj10pr28          NA    NA    NA    NA
## hv5_wj10pr29          NA    NA    NA    NA
## hv5_wj10pr3           NA    NA    NA    NA
## hv5_wj10pr30          NA    NA    NA    NA
## hv5_wj10pr31          NA    NA    NA    NA
## hv5_wj10pr32          NA    NA    NA    NA
## hv5_wj10pr33          NA    NA    NA    NA
## hv5_wj10pr34          NA    NA    NA    NA
## hv5_wj10pr36          NA    NA    NA    NA
## hv5_wj10pr37          NA    NA    NA    NA
## hv5_wj10pr38          NA    NA    NA    NA
## hv5_wj10pr39          NA    NA    NA    NA
## hv5_wj10pr4           NA    NA    NA    NA
## hv5_wj10pr40          NA    NA    NA    NA
## hv5_wj10pr41          NA    NA    NA    NA
## hv5_wj10pr42          NA    NA    NA    NA
## hv5_wj10pr43          NA    NA    NA    NA
## hv5_wj10pr44          NA    NA    NA    NA
## hv5_wj10pr45          NA    NA    NA    NA
## hv5_wj10pr46          NA    NA    NA    NA
## hv5_wj10pr47          NA    NA    NA    NA
## hv5_wj10pr48          NA    NA    NA    NA
```

```
## hv5_wj10pr49                        NA        NA        NA        NA
## hv5_wj10pr5                         NA        NA        NA        NA
## hv5_wj10pr50                        NA        NA        NA        NA
## hv5_wj10pr51                        NA        NA        NA        NA
## hv5_wj10pr52                        NA        NA        NA        NA
## hv5_wj10pr53                        NA        NA        NA        NA
## hv5_wj10pr54                        NA        NA        NA        NA
## hv5_wj10pr55                        NA        NA        NA        NA
## hv5_wj10pr56                        NA        NA        NA        NA
## hv5_wj10pr57                        NA        NA        NA        NA
## hv5_wj10pr58                        NA        NA        NA        NA
## hv5_wj10pr59                        NA        NA        NA        NA
## hv5_wj10pr6                         NA        NA        NA        NA
## hv5_wj10pr60                        NA        NA        NA        NA
## hv5_wj10pr61                        NA        NA        NA        NA
## hv5_wj10pr62                        NA        NA        NA        NA
## hv5_wj10pr63                        NA        NA        NA        NA
## hv5_wj10pr64                        NA        NA        NA        NA
## hv5_wj10pr65                        NA        NA        NA        NA
## hv5_wj10pr66                        NA        NA        NA        NA
## hv5_wj10pr67                        NA        NA        NA        NA
## hv5_wj10pr68                        NA        NA        NA        NA
## hv5_wj10pr69                        NA        NA        NA        NA
## hv5_wj10pr7                         NA        NA        NA        NA
## hv5_wj10pr70                        NA        NA        NA        NA
## hv5_wj10pr71                        NA        NA        NA        NA
## hv5_wj10pr72                        NA        NA        NA        NA
## hv5_wj10pr73                        NA        NA        NA        NA
## hv5_wj10pr74                        NA        NA        NA        NA
## hv5_wj10pr75                        NA        NA        NA        NA
## hv5_wj10pr76                        NA        NA        NA        NA
## hv5_wj10pr77                        NA        NA        NA        NA
## hv5_wj10pr78                        NA        NA        NA        NA
## hv5_wj10pr79                        NA        NA        NA        NA
## hv5_wj10pr8                         NA        NA        NA        NA
## hv5_wj10pr80                        NA        NA        NA        NA
## hv5_wj10pr81                        NA        NA        NA        NA
## hv5_wj10pr82                        NA        NA        NA        NA
## hv5_wj10pr83                        NA        NA        NA        NA
## hv5_wj10pr84                        NA        NA        NA        NA
## hv5_wj10pr85                        NA        NA        NA        NA
## hv5_wj10pr86                        NA        NA        NA        NA
## hv5_wj10pr87                        NA        NA        NA        NA
## hv5_wj10pr88                        NA        NA        NA        NA
## hv5_wj10pr89                        NA        NA        NA        NA
## hv5_wj10pr9                         NA        NA        NA        NA
## hv5_wj10pr90                        NA        NA        NA        NA
## hv5_wj10pr91                        NA        NA        NA        NA
## hv5_wj10pr92                        NA        NA        NA        NA
## hv5_wj10pr93                        NA        NA        NA        NA
## hv5_wj10pr94                        NA        NA        NA        NA
## hv5_wj10pr95                        NA        NA        NA        NA
## hv5_wj10pr96                        NA        NA        NA        NA
## hv5_wj10pr97                        NA        NA        NA        NA
```

```
## hv5_wj10pr98                  NA       NA       NA       NA
## hv5_wj10pr99                  NA       NA       NA       NA
## hv5_wj10prOther               NA       NA       NA       NA
## hv5_wj10ae<2-0                NA       NA       NA       NA
## hv5_wj10ae10-1                NA       NA       NA       NA
## hv5_wj10ae10-5                NA       NA       NA       NA
## hv5_wj10ae10-9                NA       NA       NA       NA
## hv5_wj10ae11-1                NA       NA       NA       NA
## hv5_wj10ae11-7                NA       NA       NA       NA
## hv5_wj10ae12-0                NA       NA       NA       NA
## hv5_wj10ae12-7                NA       NA       NA       NA
## hv5_wj10ae13-11               NA       NA       NA       NA
## hv5_wj10ae13-3                NA       NA       NA       NA
## hv5_wj10ae14-7                NA       NA       NA       NA
## hv5_wj10ae15-4                NA       NA       NA       NA
## hv5_wj10ae16-0                NA       NA       NA       NA
## hv5_wj10ae16-11               NA       NA       NA       NA
## hv5_wj10ae18-1                NA       NA       NA       NA
## hv5_wj10ae6-0                 NA       NA       NA       NA
## hv5_wj10ae6-2                 NA       NA       NA       NA
## hv5_wj10ae6-4                 NA       NA       NA       NA
## hv5_wj10ae6-7                 NA       NA       NA       NA
## hv5_wj10ae6-9                 NA       NA       NA       NA
## hv5_wj10ae7-0                 NA       NA       NA       NA
## hv5_wj10ae7-10                NA       NA       NA       NA
## hv5_wj10ae7-3                 NA       NA       NA       NA
## hv5_wj10ae7-5                 NA       NA       NA       NA
## hv5_wj10ae7-8                 NA       NA       NA       NA
## hv5_wj10ae8-1                 NA       NA       NA       NA
## hv5_wj10ae8-11                NA       NA       NA       NA
## hv5_wj10ae8-4                 NA       NA       NA       NA
## hv5_wj10ae8-7                 NA       NA       NA       NA
## hv5_wj10ae9-2                 NA       NA       NA       NA
## hv5_wj10ae9-6                 NA       NA       NA       NA
## hv5_wj10ae9-9                 NA       NA       NA       NA
## hv5_wj10aeOther               NA       NA       NA       NA
## hv5_wj9raw                    NA       NA       NA       NA
## hv5_9a1                       NA       NA       NA       NA
## hv5_9a2                       NA       NA       NA       NA
## hv5_9a3                       NA       NA       NA       NA
## hv5_9b                        NA       NA       NA       NA
## hv5_11a1                      NA       NA       NA       NA
## hv5_11a2               4.829e+08 4.013e+08   1.203 0.229582
## hv5_11a3                      NA       NA       NA       NA
## hv5_cwtlb                     NA       NA       NA       NA
## hv5_chtcm                     NA       NA       NA       NA
## hv5_cwtkg                     NA       NA       NA       NA
## hv5_cbmi                      NA       NA       NA       NA
## hv5_agem                      NA       NA       NA       NA
## hv5_waz                       NA       NA       NA       NA
## hv5_wap                       NA       NA       NA       NA
## hv5_bmiz                      NA       NA       NA       NA
## hv5_bmip                      NA       NA       NA       NA
## hv5_haz                       NA       NA       NA       NA
```

```
## hv5_hap                          NA        NA      NA       NA
## hv5_8a1                          NA        NA      NA       NA
## hv5_8a2                          NA        NA      NA       NA
## hv5_8b                           NA        NA      NA       NA
## hv5_mwtlb                        NA        NA      NA       NA
## hv5_mhtcm               -4.873e-04  7.194e-04  -0.677 0.498542
## hv5_mwtkg                         NA        NA      NA       NA
## hv5_mbmi                          NA        NA      NA       NA
## hv5_mbmiz                         NA        NA      NA       NA
## t5a5                              NA        NA      NA       NA
## t5c4                              NA        NA      NA       NA
## t5e1                              NA        NA      NA       NA
## t5e12                             NA        NA      NA       NA
## t5e13                             NA        NA      NA       NA
## t5e20                             NA        NA      NA       NA
## cf5age                            NA        NA      NA       NA
## cm5age                            NA        NA      NA       NA
## cm5b_age                          NA        NA      NA       NA
## cf5b_age                          NA        NA      NA       NA
## cm5hhinc                          NA        NA      NA       NA
## cf5hhinc                          NA        NA      NA       NA
## cf5hhincb                         NA        NA      NA       NA
## cm5povco                          NA        NA      NA       NA
## cf5povco                          NA        NA      NA       NA
## cf5povcob                         NA        NA      NA       NA
## f5i7_isna                         NA        NA      NA       NA
## hv5_dspr_isna                     NA        NA      NA       NA
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.6689 on 415 degrees of freedom
## Multiple R-squared:  0.7906, Adjusted R-squared:  -0.00874
## F-statistic: 0.9891 on 1584 and 415 DF,  p-value: 0.5621
```

```r
# test error
test.pred.lin <- predict(lin.reg,test)
```

```
## Warning in predict.lm(lin.reg, test): prediction from a rank-deficient fit
## may be misleading
```

```r
RMSE.lin.reg <- sqrt(mean((test.pred.lin-test$gpa)^2))
RMSE.lin.reg # 4.000996e+12
```

```
## [1] 4.000996e+12
```

```r
MAE.lin.reg <- mean(abs(test.pred.lin-test$gpa))
MAE.lin.reg # 945849288500
```

```
## [1] 945849288500
```

Conclusion: test error is so large! bad model!

Model 2: decision trees

```
library(rpart)
library(rattle)
```

```
## Warning: Failed to load RGtk2 dynamic library, attempting to install it.
```

```
## Please install GTK+ from http://r.research.att.com/libs/GTK_2.24.17-X11.pkg
```

```
## If the package still does not load, please ensure that GTK+ is installed and that it is on your PATH
```

```
## IN ANY CASE, RESTART R BEFORE TRYING TO LOAD THE PACKAGE AGAIN
```

```
## Rattle: A free graphical interface for data mining with R.
## Version 4.1.0 Copyright (c) 2006-2015 Togaware Pty Ltd.
## Type 'rattle()' to shake, rattle, and roll your data.
```

```
library(rpart.plot)

# train model
# rpart function applied to a numeric variable => regression tree
rt <- rpart(gpa~., data=train)
test.pred.rtree <- predict(rt,test)

# test error
RMSE.rtree <- sqrt(mean((test.pred.rtree-test$gpa)^2))
RMSE.rtree #0.738875
```

```
## [1] 0.738875
```

```
MAE.rtree <- mean(abs(test.pred.rtree-test$gpa))
MAE.rtree #0.6042347
```

```
## [1] 0.6042347
```

```
# check cross-validation results
printcp(rt) #Root node error:886.75/2000 = 0.44338
```

```
##
## Regression tree:
## rpart(formula = gpa ~ ., data = train)
##
## Variables actually used in tree construction:
## [1] hv5_ppvtae hv5_ppvtpr hv5_wj10pr hv5_wj9pr
##
## Root node error: 886.75/2000 = 0.44338
##
## n= 2000
##
```

```
##           CP nsplit rel error xerror      xstd
## 1  0.030192      0   1.00000 1.0004 0.027049
## 2  0.028247      2   0.93962 1.0689 0.030051
## 3  0.024937      3   0.91137 1.0992 0.031387
## 4  0.020619      4   0.88643 1.1366 0.032650
## 5  0.019277      5   0.86581 1.1528 0.033075
## 6  0.014620      6   0.84654 1.1711 0.033988
## 7  0.014507      7   0.83192 1.1812 0.034013
## 8  0.013629      8   0.81741 1.1859 0.034096
## 9  0.013589      9   0.80378 1.1853 0.034019
## 10 0.013494     10   0.79019 1.1853 0.034019
## 11 0.013310     11   0.77670 1.1853 0.034019
## 12 0.010426     12   0.76339 1.2209 0.035436
## 13 0.010000     14   0.74253 1.2374 0.035816
```

```r
# get the optimal
min.xerror <- rt$cptable[which.min(rt$cptable[,"xerror"]),"CP"]
min.xerror #0.03019199
```

```
## [1] 0.03019199
```

```r
# use it to prune the tree
rt.pruned <- prune(rt,cp = min.xerror)

# plot the pruned tree
fancyRpartPlot(rt.pruned)
```
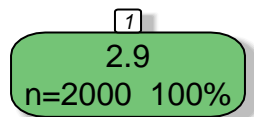

Rattle 2017–Apr–21 15:30:28 limengchen

```r
# evaluate the new pruned tree on the test set
test.pred.rtree.p <- predict(rt.pruned,test)
RMSE.rtree.pruned <- sqrt(mean((test.pred.rtree.p-test$gpa)^2))
RMSE.rtree.pruned #0.6600364 reduced!
```

```
## [1] 0.6600364
```

```
MAE.rtree.pruned <- mean(abs(test.pred.rtree.p-test$gpa))
MAE.rtree.pruned #0.5394455 reduced !
```

```
## [1] 0.5394455
```

Conclusion: Although the error of tree method is still large, it seems better than Multiple linear regression model.

Model 3: gamboostLSS

```
library('gamboostLSS')
```

```
## Loading required package: mboost
```

```
## Loading required package: parallel
```

```
## Loading required package: stabs
```

```
## This is mboost 2.7-0. See 'package?mboost' and 'news(package  = "mboost")'
## for a complete list of changes.
```

```
##
## Attaching package: 'gamboostLSS'
```

```
## The following object is masked from 'package:stats':
##
##      model.weights
```

```
# train model
lmLSS <- glmboostLSS(gpa~., data = train)
coef(lmLSS, off2int = TRUE)
```

```
## $mu
##     (Intercept)          m5b12b          m5b18b          m5f18c
##     2.935281e+00  -1.153517e-03   4.469158e-04  -2.026250e-03
##           f5a5d07          f5a8a          f5a8b02          f5a8b03
##     3.002144e-03   5.214072e-03   6.746359e-04   4.219518e-04
##           f5a8b08          f5b6a1          f5b16a          f5k9a
##    -2.471298e-03   3.803955e-03   2.929889e-03   1.575959e-03
##           n5b2c          n5d3d_3    hv5_dsae10:10   hv5_dsae7:2
##     3.947331e-05   2.444284e-03   2.147559e-02   4.274494e-02
##           m5a3          m5b16c          m5d2f2          m5i26c
##     1.584419e-03  -1.720548e-05  -4.431082e-03  -1.102376e-03
##           f5b3b          f5f18g          f5j9c          f5j9e
##    -1.127087e-03   8.378630e-05  -1.657396e-06  -2.923158e-06
## hv5_ppvtae10-11  hv5_ppvtae11-7  hv5_ppvtae13-3  hv5_ppvtae5-7
##    -1.182241e-01  -7.790520e-02   2.014510e-01  -1.143989e-01
##    hv5_ppvtae6-7   hv5_ppvtae7-0   hv5_ppvtae7-3   hv5_ppvtae7-5
```

```
##    -5.841578e-02    -5.488925e-02     1.092555e-01    -7.431236e-02
##    hv5_ppvtae8-1    hv5_ppvtae8-2    hv5_ppvtae8-4    hv5_ppvtae8-7
##     6.654925e-02    -6.853023e-02    -1.120717e-01     5.064814e-02
##    hv5_ppvtae9-7     hv5_ppvtpr37     hv5_ppvtpr63     hv5_ppvtpr95
##     2.251117e-01    -9.278379e-02     4.985337e-02     1.529934e-01
##     hv5_wj9pr16      hv5_wj9pr18      hv5_wj9pr29       hv5_wj9pr3
##     6.091306e-02    -5.167788e-02     4.445339e-02     2.120763e-01
##     hv5_wj9pr43      hv5_wj9pr47      hv5_wj9pr61      hv5_wj9pr64
##    -2.189724e-01    -4.804774e-02     2.793115e-01     9.090320e-02
##     hv5_wj9pr80      hv5_wj9pr95     hv5_wj9ae11-6     hv5_wj9ae7-2
##    -1.143501e-01    -1.921708e-01     1.603140e-01     7.514234e-02
##    hv5_wj10pr28     hv5_wj10pr62     hv5_wj10pr65     hv5_wj10pr73
##    -1.152824e-01    -8.010675e-02     7.089659e-02     3.755510e-01
##    hv5_wj10pr74     hv5_wj10pr75     hv5_wj10pr78     hv5_wj10pr97
##    -7.037712e-02    -2.112936e-01    -5.019612e-02    -1.075054e-01
##   hv5_wj10ae10-1   hv5_wj10ae10-5    hv5_wj10ae6-4    hv5_wj10ae7-5
##     2.895603e-02    -2.946792e-02     1.760986e-01     4.495714e-02
##    hv5_wj10ae8-1
##    -2.955169e-02
##
## $sigma
##      (Intercept)             k5c3       m5d2f_flag          f5a8b08          f5a8b09
##    -3.173792e-01    -9.341163e-04     1.724304e-02     1.271453e-03     4.459622e-03
##            f5b18b            f5g18            f5g22            n5b2c           p5i42c
##     6.311714e-04    -2.591910e-03    -5.240125e-03     2.888666e-05    -8.303066e-04
##      hv5_dsae15:10     hv5_dsae7:2      hv5_dsae8:2             o5b2            o5g8_1
##    -1.805544e-01    -7.634391e-02     1.545465e-02    -4.325519e-03    -3.769359e-03
##         t5e14_106           m5b17a             m5d3            f5b3b            f5f8c3
##     4.558747e-03    -9.213852e-07     4.385246e-04    -1.295270e-03     1.190790e-04
##             f5i13            f5i24e            f5i26e  hv5_ppvtae11-0   hv5_ppvtae6-3
##     4.323603e-07     1.630024e-06    -5.439566e-06     2.598325e-01    -2.684303e-01
##   hv5_ppvtae8-11   hv5_ppvtae9-4    hv5_ppvtae9-6      hv5_ppvtpr2      hv5_ppvtpr88
##     8.810816e-02    -4.517621e-02     1.088615e-01    -7.309345e-02     8.413871e-02
##     hv5_ppvtpr90      hv5_wj9pr11      hv5_wj9pr38      hv5_wj9pr49      hv5_wj9pr57
##     1.945384e-01     4.913343e-02     1.246181e-01     8.697333e-02     5.559912e-02
##      hv5_wj9pr59      hv5_wj9pr65      hv5_wj9pr76      hv5_wj9pr82     hv5_wj9ae10-2
##     6.409968e-02    -4.736551e-02     6.627398e-02     1.044262e-01    -7.289032e-02
##   hv5_wj9ae7-11     hv5_wj9ae7-2   hv5_wj9ae8-10   hv5_wj10pr<0.1      hv5_wj10pr14
##     4.980081e-02    -8.905910e-02     2.294870e-02     5.303037e-02    -1.217575e-01
##     hv5_wj10pr19     hv5_wj10pr44     hv5_wj10pr57     hv5_wj10pr78     hv5_wj10pr94
##    -3.519316e-02     8.691867e-02     1.469862e-01     5.299698e-02     1.467217e-01
##     hv5_wj10pr95  hv5_wj10ae<2-0
##     7.744829e-02     2.078599e-01
```

```r
# plot mu and sigma
par(mfrow = c(1, 2), mar = c(4, 4, 2, 5))
plot(lmLSS, off2int = TRUE)
```

mu and **sigma** coefficient paths
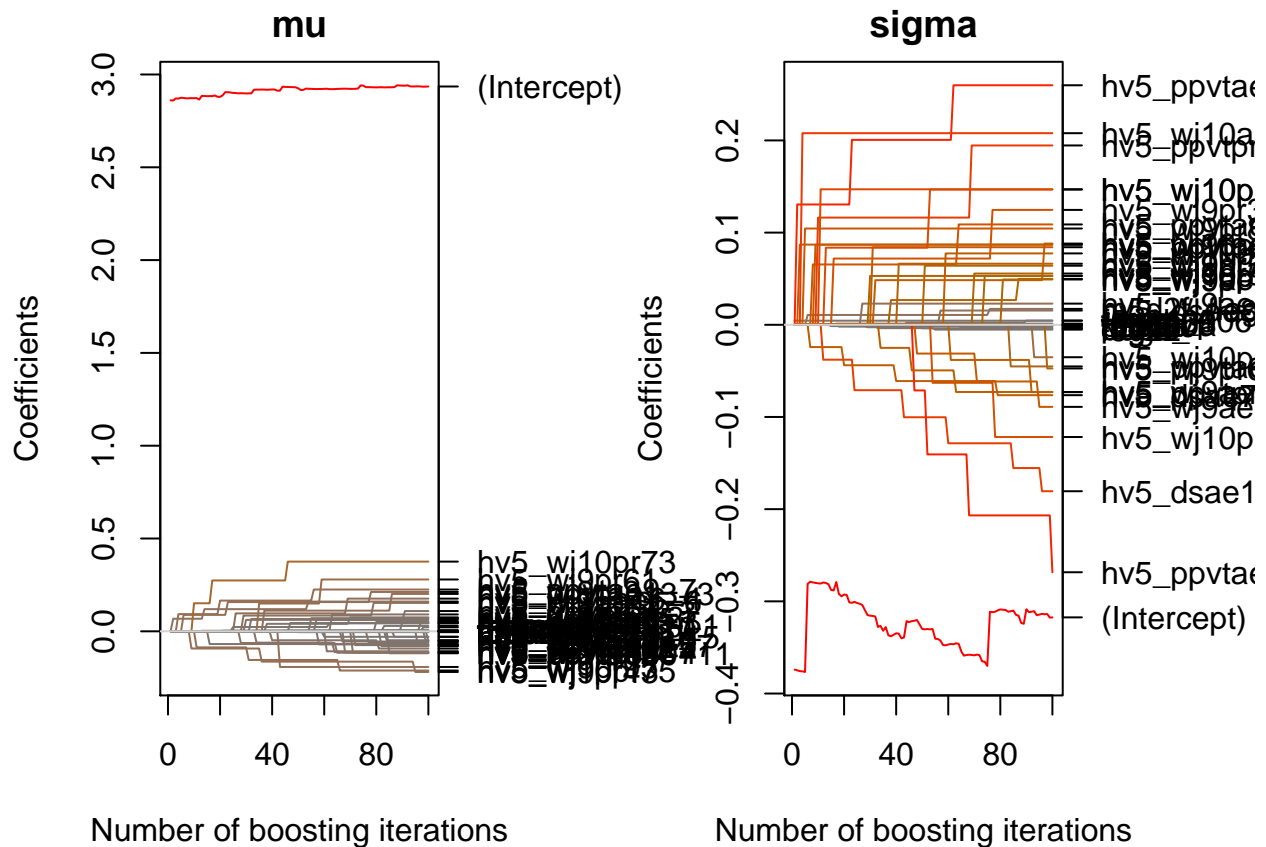
```
# test error for mu
test.pred.gam<- predict(lmLSS,test)
RMSE.gam <- sqrt(mean((test.pred.gam[[1]]-test$gpa)^2))
RMSE.gam #0.6691187
```

```
## [1] 0.6691187
```

```
MAE.gam <- mean(abs(test.pred.gam[[1]]-test$gpa))
MAE.gam #0.5473816
```

```
## [1] 0.5473816
```

Conclusion: The error of gamboostLSS is very similar with tree method.

Model Comparision

```
# Create a data frame with the error metrics for each method
accuracy <- data.frame(Method = c("Linear Regression","Full tree","Pruned tree",'gamboostLSS'),
RMSE   = c(RMSE.lin.reg,RMSE.rtree,RMSE.rtree.pruned,RMSE.gam),
MAE    = c(MAE.lin.reg,MAE.rtree,MAE.rtree.pruned,MAE.gam))

# Round the values and print the table
```

```r
accuracy$RMSE <- round(accuracy$RMSE,2)
accuracy$MAE <- round(accuracy$MAE,2)
accuracy
```

```
##               Method         RMSE          MAE
## 1 Linear Regression 4.000996e+12 9.458493e+11
## 2         Full tree 7.400000e-01 6.000000e-01
## 3       Pruned tree 6.600000e-01 5.400000e-01
## 4       gamboostLSS 6.700000e-01 5.500000e-01
```

```r
# create a data frame with the predictions for each method
all.predictions <- data.frame(actual = test$gpa,
                              linear.regression = test.pred.lin,
                              full.tree = test.pred.rtree,
                              pruned.tree = test.pred.rtree.p,
                              gamboostLSS = test.pred.gam[[1]])

# first six observations
head(all.predictions)
```

```
##    actual linear.regression full.tree pruned.tree gamboostLSS
## 14   3.25      1.048859e+11  2.865434    2.863875    2.734499
## 23   3.50     -5.455994e+11  2.482323    2.863875    2.821881
## 52   2.50      3.833284e+10  3.031034    2.863875    2.890799
## 56   2.50      7.851009e+00  2.865434    2.863875    2.846288
## 61   1.25      1.645175e+11  3.438849    2.863875    2.878191
## 74   2.75      4.242303e+11  2.925287    2.863875    2.935413
```

Conclusion: pruned tree seems relative better than other models although the errors of all models are large.

Suggestion: try to select feature in advance and try these models again.