

Stat 536 HW3

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Question A

```
rm(list = ls())
data <- read.table("policestops.txt",header = TRUE)

attach(data)

model1A <- glm(mystops ~ 1,family=poisson(link = "log"))
summary(model1A)

##
## Call:
## glm(formula = mystops ~ 1, family = poisson(link = "log"))
##
## Deviance Residuals:
##      Min       1Q   Median       3Q      Max
## -33.049  -22.552   -8.788    9.343   65.227
##
## Coefficients:
##              Estimate Std. Error z value Pr(>|z|)
## (Intercept)  6.370053   0.002758   2309   <2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for poisson family taken to be 1)
##
##      Null deviance: 123333  on 224  degrees of freedom
## Residual deviance: 123333  on 224  degrees of freedom
## AIC: 125041
##
## Number of Fisher Scoring iterations: 5

model2A <- glm(mystops ~ factor(myeth),family=poisson(link = "log"))
summary(model2A)

##
## Call:
## glm(formula = mystops ~ factor(myeth), family = poisson(link = "log"))
##
## Deviance Residuals:
##      Min       1Q   Median       3Q      Max
## -42.184  -16.723   -6.891    8.867   57.213
##
```

```
## Coefficients:
##              Estimate Std. Error z value Pr(>|z|)
## (Intercept)    6.836231   0.003784 1806.41  <2e-16 ***
## factor(myeth)2 -0.447714   0.006061  -73.87  <2e-16 ***
## factor(myeth)3 -1.414281   0.008558 -165.26  <2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for poisson family taken to be 1)
##
##      Null deviance: 123333  on 224  degrees of freedom
## Residual deviance:  88771  on 222  degrees of freedom
## AIC: 90484
##
## Number of Fisher Scoring iterations: 5

model3A <- glm(mystops ~ factor(myprecinct),family=poisson(link = "log"))
summary(model3A)

##
## Call:
## glm(formula = mystops ~ factor(myprecinct), family = poisson(link = "log"))
##
## Deviance Residuals:
##      Min       1Q   Median       3Q      Max
## -46.573  -17.709   -2.450    9.459   45.206
##
## Coefficients:
##              Estimate Std. Error z value Pr(>|z|)
## (Intercept)      4.85463    0.05096  95.255 < 2e-16 ***
## factor(myprecinct)2 -0.10392    0.07402  -1.404 0.160352
## factor(myprecinct)3  1.42639    0.05676  25.132 < 2e-16 ***
## factor(myprecinct)4  1.29881    0.05750  22.588 < 2e-16 ***
## factor(myprecinct)5  1.42452    0.05677  25.094 < 2e-16 ***
## factor(myprecinct)6  1.21457    0.05804  20.927 < 2e-16 ***
## factor(myprecinct)7  0.52219    0.06433   8.117 4.76e-16 ***
## factor(myprecinct)8  1.40686    0.05686  24.741 < 2e-16 ***
## factor(myprecinct)9 -0.30075    0.07814  -3.849 0.000119 ***
## factor(myprecinct)10 1.09948    0.05884  18.685 < 2e-16 ***
## factor(myprecinct)11 0.77777    0.06157  12.633 < 2e-16 ***
## factor(myprecinct)12 0.83121    0.06106  13.613 < 2e-16 ***
## factor(myprecinct)13 1.74976    0.05522  31.689 < 2e-16 ***
## factor(myprecinct)14 1.10723    0.05879  18.835 < 2e-16 ***
## factor(myprecinct)15 1.81867    0.05494  33.101 < 2e-16 ***
## factor(myprecinct)16 0.91888    0.06028  15.244 < 2e-16 ***
## factor(myprecinct)17 0.89900    0.06045  14.871 < 2e-16 ***
## factor(myprecinct)18 1.81275    0.05497  32.979 < 2e-16 ***
## factor(myprecinct)19 1.22530    0.05797  21.138 < 2e-16 ***
## factor(myprecinct)20 1.40304    0.05689  24.664 < 2e-16 ***
## factor(myprecinct)21 1.43261    0.05672  25.257 < 2e-16 ***
## factor(myprecinct)22 2.34828    0.05334  44.022 < 2e-16 ***
## factor(myprecinct)23 1.80210    0.05501  32.761 < 2e-16 ***
## factor(myprecinct)24 1.91845    0.05458  35.150 < 2e-16 ***
## factor(myprecinct)25 2.25878    0.05356  42.172 < 2e-16 ***
## factor(myprecinct)26 1.38694    0.05698  24.342 < 2e-16 ***
```

```

## factor(myprecinct)27 1.65016 0.05564 29.656 < 2e-16 ***
## factor(myprecinct)28 0.85137 0.06088 13.985 < 2e-16 ***
## factor(myprecinct)29 2.01508 0.05426 37.140 < 2e-16 ***
## factor(myprecinct)30 1.72323 0.05533 31.147 < 2e-16 ***
## factor(myprecinct)31 1.54507 0.05614 27.523 < 2e-16 ***
## factor(myprecinct)32 0.99469 0.05965 16.676 < 2e-16 ***
## factor(myprecinct)33 2.04173 0.05417 37.690 < 2e-16 ***
## factor(myprecinct)34 1.98770 0.05434 36.576 < 2e-16 ***
## factor(myprecinct)35 0.63155 0.06308 10.012 < 2e-16 ***
## factor(myprecinct)36 1.12762 0.05864 19.230 < 2e-16 ***
## factor(myprecinct)37 0.95151 0.06000 15.858 < 2e-16 ***
## factor(myprecinct)38 1.54673 0.05613 27.557 < 2e-16 ***
## factor(myprecinct)39 1.85630 0.05480 33.873 < 2e-16 ***
## factor(myprecinct)40 0.80253 0.06133 13.085 < 2e-16 ***
## factor(myprecinct)41 1.63710 0.05570 29.390 < 2e-16 ***
## factor(myprecinct)42 1.93996 0.05450 35.593 < 2e-16 ***
## factor(myprecinct)43 1.45225 0.05662 25.651 < 2e-16 ***
## factor(myprecinct)44 1.46674 0.05654 25.942 < 2e-16 ***
## factor(myprecinct)45 2.03733 0.05419 37.599 < 2e-16 ***
## factor(myprecinct)46 2.19086 0.05374 40.769 < 2e-16 ***
## factor(myprecinct)47 0.95551 0.05997 15.933 < 2e-16 ***
## factor(myprecinct)48 1.40813 0.05686 24.766 < 2e-16 ***
## factor(myprecinct)49 0.99469 0.05965 16.676 < 2e-16 ***
## factor(myprecinct)50 2.07096 0.05408 38.293 < 2e-16 ***
## factor(myprecinct)51 1.14348 0.05853 19.538 < 2e-16 ***
## factor(myprecinct)52 1.70404 0.05541 30.755 < 2e-16 ***
## factor(myprecinct)53 1.15008 0.05848 19.667 < 2e-16 ***
## factor(myprecinct)54 0.94950 0.06002 15.820 < 2e-16 ***
## factor(myprecinct)55 1.08554 0.05895 18.416 < 2e-16 ***
## factor(myprecinct)56 0.39590 0.06592 6.006 1.91e-09 ***
## factor(myprecinct)57 0.79903 0.06136 13.021 < 2e-16 ***
## factor(myprecinct)58 1.93696 0.05451 35.531 < 2e-16 ***
## factor(myprecinct)59 1.09166 0.05890 18.534 < 2e-16 ***
## factor(myprecinct)60 2.03326 0.05420 37.515 < 2e-16 ***
## factor(myprecinct)61 1.44002 0.05668 25.405 < 2e-16 ***
## factor(myprecinct)62 1.44615 0.05665 25.529 < 2e-16 ***
## factor(myprecinct)63 1.17605 0.05830 20.173 < 2e-16 ***
## factor(myprecinct)64 1.25536 0.05777 21.730 < 2e-16 ***
## factor(myprecinct)65 1.78306 0.05508 32.371 < 2e-16 ***
## factor(myprecinct)66 2.03326 0.05420 37.515 < 2e-16 ***
## factor(myprecinct)67 1.84240 0.05485 33.588 < 2e-16 ***
## factor(myprecinct)68 1.05797 0.05915 17.885 < 2e-16 ***
## factor(myprecinct)69 1.19116 0.05820 20.468 < 2e-16 ***
## factor(myprecinct)70 1.86116 0.05478 33.973 < 2e-16 ***
## factor(myprecinct)71 2.02678 0.05422 37.382 < 2e-16 ***
## factor(myprecinct)72 2.22427 0.05365 41.459 < 2e-16 ***
## factor(myprecinct)73 2.24924 0.05359 41.975 < 2e-16 ***
## factor(myprecinct)74 1.23743 0.05789 21.376 < 2e-16 ***
## factor(myprecinct)75 -0.17869 0.07552 -2.366 0.017971 *
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for poisson family taken to be 1)
##

```

```

##      Null deviance: 123333  on 224  degrees of freedom
## Residual deviance:  89048  on 150  degrees of freedom
## AIC: 90905
##
## Number of Fisher Scoring iterations: 6
model4A <- glm(mystops ~ factor(myeth)+factor(myprecinct),
               family=poisson(link = "log"))
summary(model4A)

##
## Call:
## glm(formula = mystops ~ factor(myeth) + factor(myprecinct), family = poisson(link = "log"))
##
## Deviance Residuals:
##      Min       1Q   Median       3Q      Max
## -36.603  -12.500   -2.412    8.935   38.919
##
## Coefficients:
##              Estimate Std. Error z value Pr(>|z|)
## (Intercept)      5.320809   0.051031  104.267 < 2e-16 ***
## factor(myeth)2    -0.447714   0.006061  -73.872 < 2e-16 ***
## factor(myeth)3    -1.414281   0.008558 -165.263 < 2e-16 ***
## factor(myprecinct)2 -0.103919   0.074022  -1.404 0.160352
## factor(myprecinct)3  1.426389   0.056756  25.132 < 2e-16 ***
## factor(myprecinct)4  1.298811   0.057499  22.588 < 2e-16 ***
## factor(myprecinct)5  1.424516   0.056766  25.094 < 2e-16 ***
## factor(myprecinct)6  1.214566   0.058038  20.927 < 2e-16 ***
## factor(myprecinct)7  0.522189   0.064329   8.117 4.76e-16 ***
## factor(myprecinct)8  1.406861   0.056864  24.741 < 2e-16 ***
## factor(myprecinct)9 -0.300754   0.078142  -3.849 0.000119 ***
## factor(myprecinct)10 1.099478   0.058843  18.685 < 2e-16 ***
## factor(myprecinct)11 0.777775   0.061569  12.633 < 2e-16 ***
## factor(myprecinct)12 0.831214   0.061062  13.613 < 2e-16 ***
## factor(myprecinct)13 1.749764   0.055217  31.689 < 2e-16 ***
## factor(myprecinct)14 1.107233   0.058786  18.835 < 2e-16 ***
## factor(myprecinct)15 1.818667   0.054944  33.101 < 2e-16 ***
## factor(myprecinct)16 0.918885   0.060280  15.244 < 2e-16 ***
## factor(myprecinct)17 0.898999   0.060452  14.871 < 2e-16 ***
## factor(myprecinct)18 1.812750   0.054966  32.979 < 2e-16 ***
## factor(myprecinct)19 1.225302   0.057967  21.138 < 2e-16 ***
## factor(myprecinct)20 1.403037   0.056886  24.664 < 2e-16 ***
## factor(myprecinct)21 1.432608   0.056722  25.257 < 2e-16 ***
## factor(myprecinct)22 2.348278   0.053344  44.022 < 2e-16 ***
## factor(myprecinct)23 1.802095   0.055008  32.761 < 2e-16 ***
## factor(myprecinct)24 1.918449   0.054578  35.150 < 2e-16 ***
## factor(myprecinct)25 2.258782   0.053561  42.172 < 2e-16 ***
## factor(myprecinct)26 1.386944   0.056977  24.342 < 2e-16 ***
## factor(myprecinct)27 1.650156   0.055643  29.656 < 2e-16 ***
## factor(myprecinct)28 0.851371   0.060877  13.985 < 2e-16 ***
## factor(myprecinct)29 2.015076   0.054256  37.140 < 2e-16 ***
## factor(myprecinct)30 1.723230   0.055326  31.147 < 2e-16 ***
## factor(myprecinct)31 1.545073   0.056138  27.523 < 2e-16 ***
## factor(myprecinct)32 0.994694   0.059649  16.676 < 2e-16 ***
## factor(myprecinct)33 2.041726   0.054172  37.690 < 2e-16 ***

```

```

## factor(myprecinct)34 1.987696 0.054344 36.576 < 2e-16 ***
## factor(myprecinct)35 0.631548 0.063076 10.012 < 2e-16 ***
## factor(myprecinct)36 1.127625 0.058638 19.230 < 2e-16 ***
## factor(myprecinct)37 0.951507 0.060003 15.858 < 2e-16 ***
## factor(myprecinct)38 1.546733 0.056129 27.557 < 2e-16 ***
## factor(myprecinct)39 1.856298 0.054802 33.873 < 2e-16 ***
## factor(myprecinct)40 0.802526 0.061331 13.085 < 2e-16 ***
## factor(myprecinct)41 1.637104 0.055702 29.390 < 2e-16 ***
## factor(myprecinct)42 1.939956 0.054504 35.593 < 2e-16 ***
## factor(myprecinct)43 1.452252 0.056615 25.651 < 2e-16 ***
## factor(myprecinct)44 1.466737 0.056538 25.942 < 2e-16 ***
## factor(myprecinct)45 2.037334 0.054185 37.599 < 2e-16 ***
## factor(myprecinct)46 2.190855 0.053739 40.769 < 2e-16 ***
## factor(myprecinct)47 0.955511 0.059970 15.933 < 2e-16 ***
## factor(myprecinct)48 1.408132 0.056857 24.766 < 2e-16 ***
## factor(myprecinct)49 0.994694 0.059649 16.676 < 2e-16 ***
## factor(myprecinct)50 2.070964 0.054082 38.293 < 2e-16 ***
## factor(myprecinct)51 1.143478 0.058525 19.538 < 2e-16 ***
## factor(myprecinct)52 1.704039 0.055408 30.755 < 2e-16 ***
## factor(myprecinct)53 1.150079 0.058479 19.667 < 2e-16 ***
## factor(myprecinct)54 0.949499 0.060020 15.820 < 2e-16 ***
## factor(myprecinct)55 1.085540 0.058946 18.416 < 2e-16 ***
## factor(myprecinct)56 0.395896 0.065922 6.006 1.91e-09 ***
## factor(myprecinct)57 0.799027 0.061365 13.021 < 2e-16 ***
## factor(myprecinct)58 1.936965 0.054514 35.531 < 2e-16 ***
## factor(myprecinct)59 1.091662 0.058900 18.534 < 2e-16 ***
## factor(myprecinct)60 2.033262 0.054198 37.515 < 2e-16 ***
## factor(myprecinct)61 1.440020 0.056681 25.405 < 2e-16 ***
## factor(myprecinct)62 1.446155 0.056648 25.529 < 2e-16 ***
## factor(myprecinct)63 1.176054 0.058298 20.173 < 2e-16 ***
## factor(myprecinct)64 1.255357 0.057772 21.730 < 2e-16 ***
## factor(myprecinct)65 1.783064 0.055083 32.371 < 2e-16 ***
## factor(myprecinct)66 2.033262 0.054198 37.515 < 2e-16 ***
## factor(myprecinct)67 1.842403 0.054854 33.588 < 2e-16 ***
## factor(myprecinct)68 1.057971 0.059153 17.885 < 2e-16 ***
## factor(myprecinct)69 1.191164 0.058195 20.468 < 2e-16 ***
## factor(myprecinct)70 1.861156 0.054784 33.973 < 2e-16 ***
## factor(myprecinct)71 2.026780 0.054218 37.382 < 2e-16 ***
## factor(myprecinct)72 2.224272 0.053650 41.459 < 2e-16 ***
## factor(myprecinct)73 2.249239 0.053585 41.975 < 2e-16 ***
## factor(myprecinct)74 1.237433 0.057888 21.376 < 2e-16 ***
## factor(myprecinct)75 -0.178692 0.075517 -2.366 0.017969 *
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for poisson family taken to be 1)
##
## Null deviance: 123333 on 224 degrees of freedom
## Residual deviance: 54487 on 148 degrees of freedom
## AIC: 56348
##
## Number of Fisher Scoring iterations: 6

```

```

detach(data)

# AIC
AIC(model1A)

## [1] 125041.1
AIC(model2A)

## [1] 90483.73
AIC(model3A)

## [1] 90905
AIC(model4A)

## [1] 56347.6

# BIC
model1A$deviance+model1A$rank*log(length(data$mystops))

## [1] 123337.9
model2A$deviance+model2A$rank*log(length(data$mystops))

## [1] 88787.37
model3A$deviance+model3A$rank*log(length(data$mystops))

## [1] 89454.59
model4A$deviance+model4A$rank*log(length(data$mystops))

## [1] 54904.03

Based on aic and bic, I will select the last model with both precinct and ethnicity as predictors.

#summary(model4A)
predict(model4A, newdata = data.frame(myeth = 1, myprecinct = 3), type="response")

##          1
## 851.6685
predict(model4A, newdata = data.frame(myeth = 3, myprecinct = 3), type="response")

##          1
## 207.041
predict(model4A, newdata = data.frame(myeth = 1, myprecinct = 1), type="response")

##          1
## 204.5492
predict(model4A, newdata = data.frame(myeth = 3, myprecinct = 1), type="response")

##          1
## 49.72599

```

For precinct 3, the blacks are expected to stop 851.6685 times but whites 207.041 times; for precinct 1, the blacks are expected to stop 204.5492 times but whites 49.72599 times.

Question B

```
attach(data)

model1B <- glm(mystops ~ 1,family=poisson(link = "log"),
              offset=log(myarrests))

model2B <- glm(mystops ~ factor(myeth),family=poisson(link = "log"),
              offset=log(myarrests))

model3B <- glm(mystops ~ factor(myprecinct),family=poisson(link = "log"),
              offset=log(myarrests))

model4B <- glm(mystops ~ factor(myeth)+factor(myprecinct),
              family=poisson(link = "log"),offset=log(myarrests))

detach(data)
```

AIC

```
AIC(model1B)
```

```
## [1] 47828.87
```

```
AIC(model2B)
```

```
## [1] 47149.97
```

```
AIC(model3B)
```

```
## [1] 7752.906
```

```
AIC(model4B)
```

```
## [1] 5287.752
```

BIC

```
model1B$deviance+model1B$rank*log(length(data$mystops))
```

```
## [1] 46125.68
```

```
model2B$deviance+model2B$rank*log(length(data$mystops))
```

```
## [1] 45453.6
```

```
model3B$deviance+model3B$rank*log(length(data$mystops))
```

```
## [1] 6302.501
```

```
model4B$deviance+model4B$rank*log(length(data$mystops))
```

```
## [1] 3844.179
```

Based on aic and bic, I will select the last model with both precinct and ethnicity as predictors. The model with arrest as baseline will be more preferable because it has lower aic and bic.

#summary(model4B)

```
myarrests1_black = 980
```

```
myarrests1_white = 381
```

```
myarrests3_black = 2188
```

```
myarrests3_white = 1238
```

```
predict(model4B, newdata =
  data.frame(myeth = 1, myprecinct = 3, myarrests = myarrests3_black),
  type="response")
```

```
##      1
## 964.7125
```

```
predict(model4B, newdata =
  data.frame(myeth = 3, myprecinct = 3, myarrests = myarrests3_white),
  type="response")
```

```
##      1
## 359.0057
```

```
predict(model4B, newdata =
  data.frame(myeth = 1, myprecinct = 1, myarrests = myarrests1_black),
  type="response")
```

```
##      1
## 246.8262
```

```
predict(model4B, newdata =
  data.frame(myeth = 3, myprecinct = 1, myarrests = myarrests1_white),
  type="response")
```

```
##      1
## 63.11321
```

For precinct 3, the blacks are expected to stop 964.7125 times but whites 359.0057 times; for precinct 1, the blacks are expected to stop 246.8262 times but whites 63.11321 times.

Question C

```
summary(model4B)
```

```
##
## Call:
## glm(formula = mystops ~ factor(myeth) + factor(myprecinct), family = poisson(link = "log"),
##      offset = log(myarrests))
##
## Deviance Residuals:
##      Min       1Q   Median       3Q      Max
## -11.1396  -3.0895  -0.1934   2.0988  10.4185
##
## Coefficients:
##              Estimate Std. Error z value Pr(>|z|)
## (Intercept)    -1.378868   0.051019 -27.027 < 2e-16 ***
## factor(myeth)2     0.010188   0.006802   1.498 0.134190
## factor(myeth)3    -0.419001   0.009435 -44.409 < 2e-16 ***
## factor(myprecinct)2 -0.149050   0.074030  -2.013 0.044077 *
## factor(myprecinct)3  0.559955   0.056758   9.866 < 2e-16 ***
## factor(myprecinct)4  1.210636   0.057549  21.037 < 2e-16 ***
## factor(myprecinct)5  0.282865   0.056794   4.981 6.34e-07 ***
## factor(myprecinct)6  1.144204   0.058047  19.712 < 2e-16 ***
## factor(myprecinct)7  0.218173   0.064335   3.391 0.000696 ***
## factor(myprecinct)8 -0.390565   0.056868  -6.868 6.51e-12 ***
```



```

## factor(myprecinct)9 0.485112 0.078151 6.207 5.39e-10 ***
## factor(myprecinct)10 0.417068 0.058851 7.087 1.37e-12 ***
## factor(myprecinct)11 0.654417 0.061586 10.626 < 2e-16 ***
## factor(myprecinct)12 1.148698 0.061067 18.811 < 2e-16 ***
## factor(myprecinct)13 1.053509 0.055250 19.068 < 2e-16 ***
## factor(myprecinct)14 0.614115 0.058803 10.444 < 2e-16 ***
## factor(myprecinct)15 1.054904 0.054956 19.195 < 2e-16 ***
## factor(myprecinct)16 0.797715 0.060290 13.231 < 2e-16 ***
## factor(myprecinct)17 -0.049312 0.060478 -0.815 0.414864
## factor(myprecinct)18 0.131645 0.054981 2.394 0.016649 *
## factor(myprecinct)19 0.319164 0.057999 5.503 3.74e-08 ***
## factor(myprecinct)20 -0.040574 0.056928 -0.713 0.476016
## factor(myprecinct)21 0.410988 0.056805 7.235 4.65e-13 ***
## factor(myprecinct)22 1.211227 0.053399 22.683 < 2e-16 ***
## factor(myprecinct)23 0.599919 0.055064 10.895 < 2e-16 ***
## factor(myprecinct)24 1.319454 0.054600 24.166 < 2e-16 ***
## factor(myprecinct)25 0.913359 0.053596 17.041 < 2e-16 ***
## factor(myprecinct)26 -0.147614 0.057006 -2.589 0.009612 **
## factor(myprecinct)27 1.895485 0.055664 34.052 < 2e-16 ***
## factor(myprecinct)28 -0.764964 0.060915 -12.558 < 2e-16 ***
## factor(myprecinct)29 1.124710 0.054267 20.726 < 2e-16 ***
## factor(myprecinct)30 0.524652 0.055374 9.475 < 2e-16 ***
## factor(myprecinct)31 1.649498 0.056167 29.368 < 2e-16 ***
## factor(myprecinct)32 1.386276 0.059679 23.229 < 2e-16 ***
## factor(myprecinct)33 1.083192 0.054214 19.980 < 2e-16 ***
## factor(myprecinct)34 1.518972 0.054355 27.945 < 2e-16 ***
## factor(myprecinct)35 0.879407 0.063190 13.917 < 2e-16 ***
## factor(myprecinct)36 1.616306 0.058796 27.490 < 2e-16 ***
## factor(myprecinct)37 1.409430 0.060008 23.487 < 2e-16 ***
## factor(myprecinct)38 1.763813 0.056195 31.388 < 2e-16 ***
## factor(myprecinct)39 0.501081 0.054841 9.137 < 2e-16 ***
## factor(myprecinct)40 1.531984 0.061467 24.924 < 2e-16 ***
## factor(myprecinct)41 1.913898 0.055716 34.351 < 2e-16 ***
## factor(myprecinct)42 1.084217 0.054511 19.890 < 2e-16 ***
## factor(myprecinct)43 0.541787 0.056645 9.565 < 2e-16 ***
## factor(myprecinct)44 0.883038 0.056671 15.582 < 2e-16 ***
## factor(myprecinct)45 0.838439 0.054215 15.465 < 2e-16 ***
## factor(myprecinct)46 0.655855 0.053750 12.202 < 2e-16 ***
## factor(myprecinct)47 1.128144 0.059981 18.808 < 2e-16 ***
## factor(myprecinct)48 0.411880 0.056895 7.239 4.51e-13 ***
## factor(myprecinct)49 1.101219 0.059681 18.452 < 2e-16 ***
## factor(myprecinct)50 0.878797 0.054109 16.241 < 2e-16 ***
## factor(myprecinct)51 0.348980 0.058550 5.960 2.52e-09 ***
## factor(myprecinct)52 0.491898 0.055458 8.870 < 2e-16 ***
## factor(myprecinct)53 0.599687 0.058486 10.254 < 2e-16 ***
## factor(myprecinct)54 0.491840 0.060042 8.192 2.58e-16 ***
## factor(myprecinct)55 0.497511 0.059023 8.429 < 2e-16 ***
## factor(myprecinct)56 0.890877 0.065982 13.502 < 2e-16 ***
## factor(myprecinct)57 1.532782 0.061366 24.978 < 2e-16 ***
## factor(myprecinct)58 1.578846 0.054528 28.955 < 2e-16 ***
## factor(myprecinct)59 1.083726 0.058920 18.393 < 2e-16 ***
## factor(myprecinct)60 0.833828 0.054216 15.380 < 2e-16 ***
## factor(myprecinct)61 1.277336 0.056757 22.506 < 2e-16 ***
## factor(myprecinct)62 1.206378 0.056666 21.289 < 2e-16 ***

```

```

## factor(myprecinct)63 1.308782 0.058301 22.449 < 2e-16 ***
## factor(myprecinct)64 1.712497 0.057772 29.642 < 2e-16 ***
## factor(myprecinct)65 1.899204 0.055154 34.434 < 2e-16 ***
## factor(myprecinct)66 2.102128 0.054231 38.763 < 2e-16 ***
## factor(myprecinct)67 1.202841 0.054957 21.887 < 2e-16 ***
## factor(myprecinct)68 2.201257 0.059245 37.155 < 2e-16 ***
## factor(myprecinct)69 1.720700 0.058227 29.551 < 2e-16 ***
## factor(myprecinct)70 1.032004 0.054813 18.828 < 2e-16 ***
## factor(myprecinct)71 1.479415 0.054239 27.276 < 2e-16 ***
## factor(myprecinct)72 1.464985 0.053737 27.262 < 2e-16 ***
## factor(myprecinct)73 0.991018 0.053585 18.494 < 2e-16 ***
## factor(myprecinct)74 1.151460 0.058023 19.845 < 2e-16 ***
## factor(myprecinct)75 1.571225 0.075731 20.747 < 2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for poisson family taken to be 1)
##
##      Null deviance: 46120.3  on 224  degrees of freedom
## Residual deviance:  3427.1  on 148  degrees of freedom
## AIC: 5287.8
##
## Number of Fisher Scoring iterations: 4
exp(-0.419001)

## [1] 0.6577035

```

Based on the coefficients of factor(myeth)3 above, yes, there is a significant difference in number of stops given by the police based on race. The expected counts for white are 65.77035% of those for blacks.