

# Output For Midterm

March 16, 2016

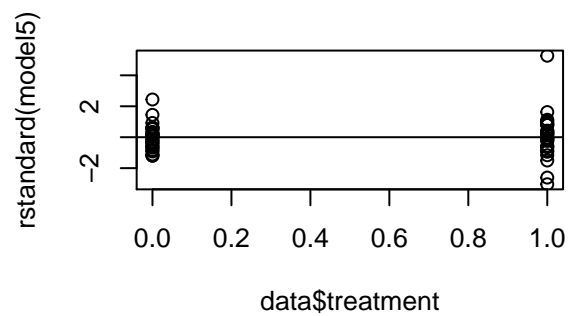
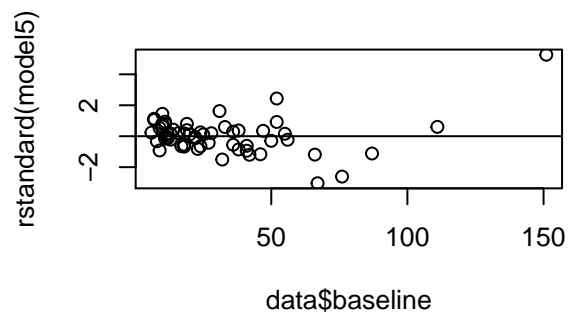
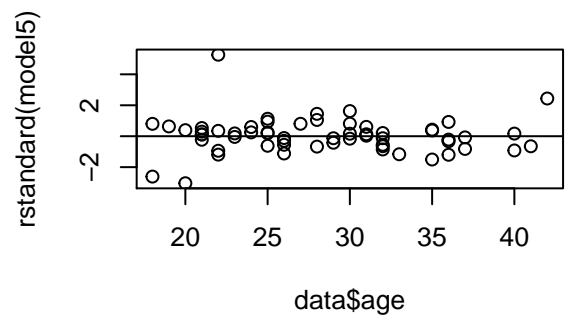
## Output for Question 2

```
##
## Call:
## lm(formula = seizures ~ baseline + treatment + age, data = data)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -18.773  -3.525   0.110   3.474  41.173
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept) -15.69284    6.15034  -2.552  0.0135 *
## baseline      0.45589    0.04429  10.293 1.96e-14 ***
## treatment    -0.67576    2.33279  -0.290  0.7732
## age           0.37983    0.18984   2.001  0.0504 .
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 8.902 on 55 degrees of freedom
## Multiple R-squared:  0.6585, Adjusted R-squared:  0.6399
## F-statistic: 35.36 on 3 and 55 DF,  p-value: 7.215e-13
```

## Output for Question 4

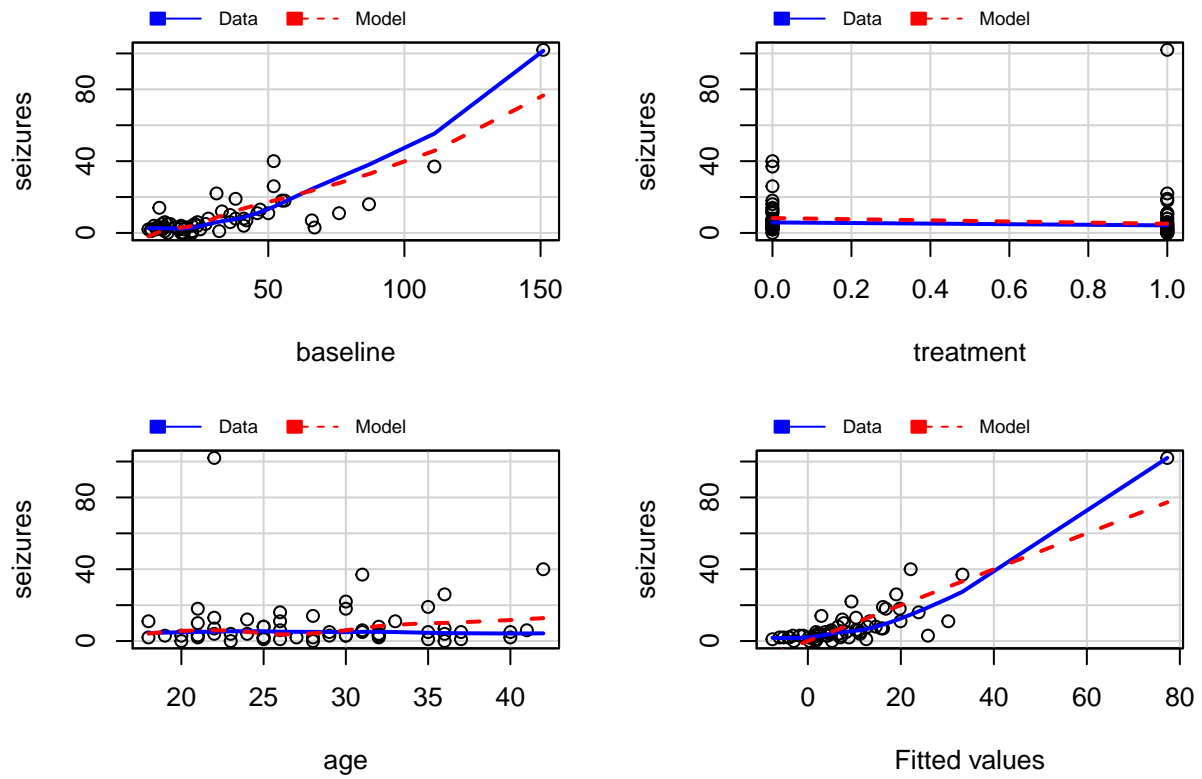
```
##
## Call:
## lm(formula = seizures ~ baseline * treatment + age, data = data)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -22.8317  -4.5587   0.8454   3.4976  24.7035
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)   -14.38252    5.47062  -2.629 0.011129 *
## baseline        0.28504    0.05829   4.890 9.44e-06 ***
## treatment     -10.33219    3.19416  -3.235 0.002080 **
## age            0.51602    0.17200   3.000 0.004079 **
## baseline:treatment  0.31535    0.07941   3.971 0.000213 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 7.904 on 54 degrees of freedom
## Multiple R-squared:  0.7357, Adjusted R-squared:  0.7161
## F-statistic: 37.58 on 4 and 54 DF,  p-value: 5.192e-15
```

## Output for question 5

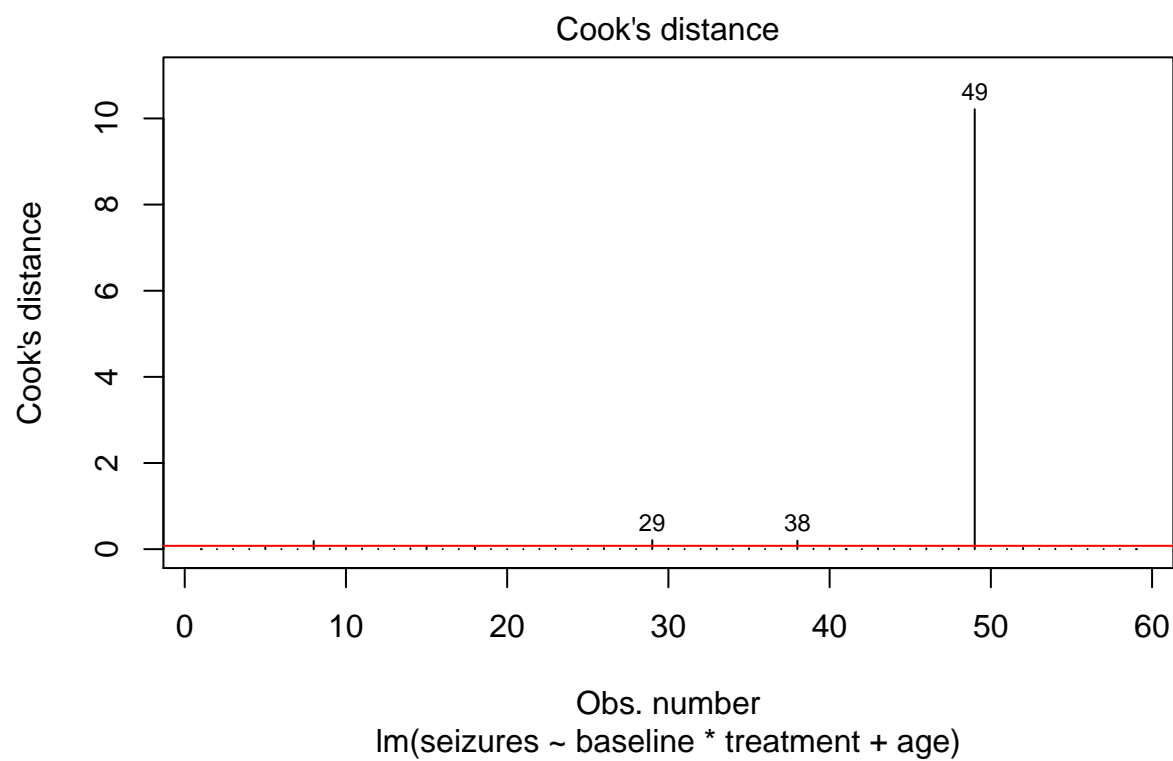


## Output for Question 6

Marginal Model Plots



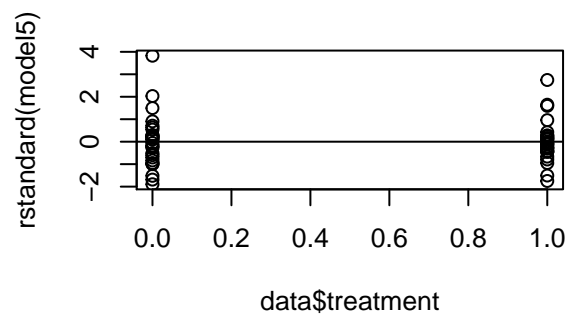
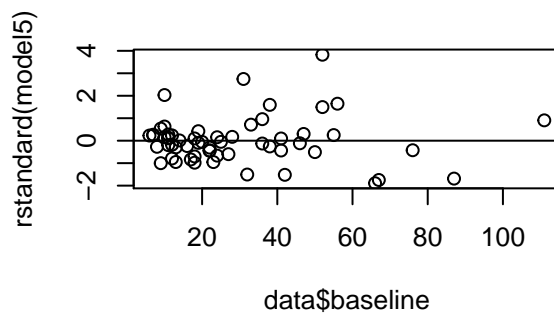
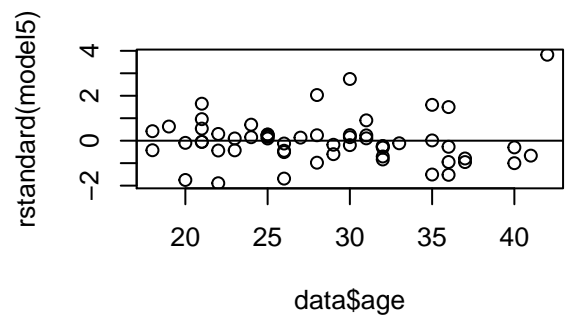
## Output for Question 7



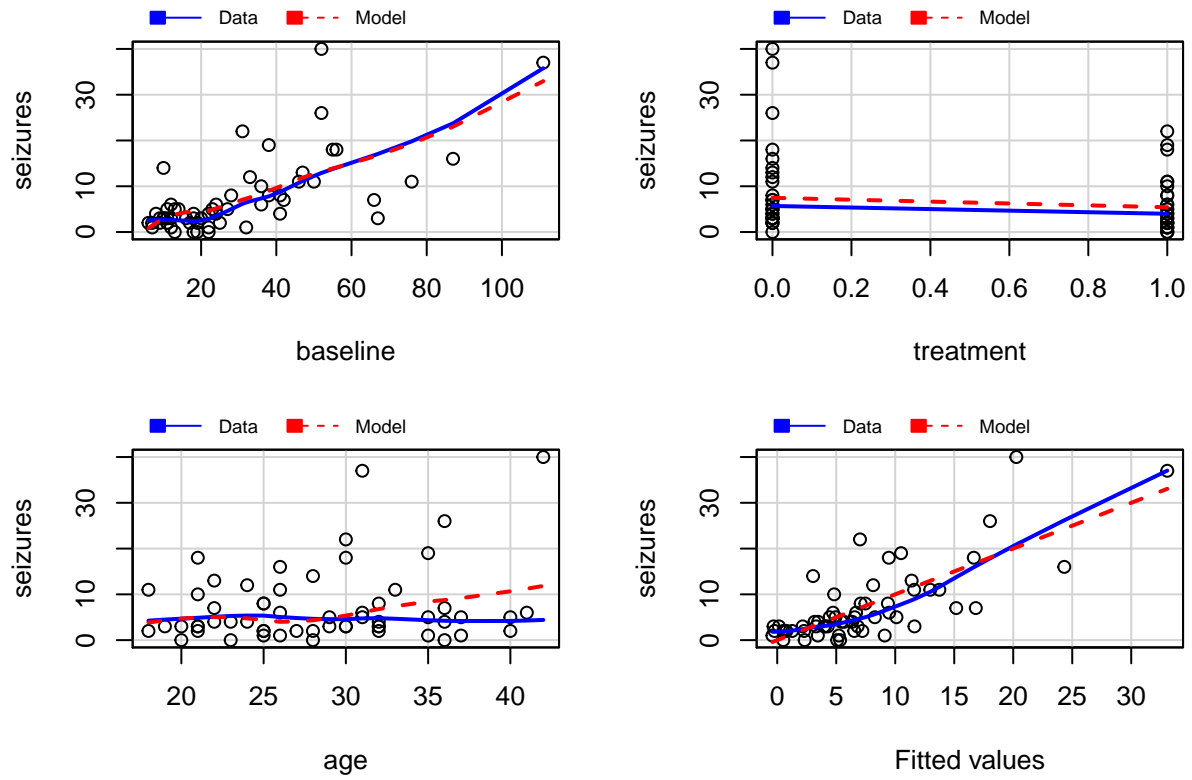
## Output for Question 8

```
##
## Call:
## lm(formula = seizures ~ baseline * treatment + age, data = data)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -9.829 -2.665 -0.405  1.388 19.736
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)   -10.24155     3.88981  -2.633  0.01107 *
## baseline         0.28614     0.04102   6.975 4.94e-09 ***
## treatment     -1.08432     2.56527  -0.423  0.67423
## age             0.37205     0.12258   3.035  0.00372 **
## baseline:treatment -0.05455     0.07461  -0.731  0.46793
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 5.563 on 53 degrees of freedom
## Multiple R-squared:  0.5855, Adjusted R-squared:  0.5542
## F-statistic: 18.72 on 4 and 53 DF,  p-value: 1.207e-09
```

## Output for Question 9



## Marginal Model Plots



## Output for Question 10

```
##
## Call:
## glm(formula = treatment ~ baseline, family = binomial(link = "logit"),
##      data = data)
##
## Deviance Residuals:
##      Min       1Q   Median       3Q      Max
## -1.274  -1.231   1.086   1.132   1.284
##
## Coefficients:
##              Estimate Std. Error z value Pr(>|z|)
## (Intercept)  0.265334   0.442919   0.599   0.549
## baseline    -0.006735   0.012238  -0.550   0.582
##
## (Dispersion parameter for binomial family taken to be 1)
##
##      Null deviance: 80.336  on 57  degrees of freedom
## Residual deviance: 80.030  on 56  degrees of freedom
## AIC: 84.03
##
## Number of Fisher Scoring iterations: 3
```

```
##
## Call:
## glm(formula = treatment ~ age, family = binomial(link = "logit"),
##      data = data)
##
## Deviance Residuals:
##      Min       1Q   Median       3Q      Max
## -1.320  -1.198   1.030   1.129   1.296
##
## Coefficients:
##              Estimate Std. Error z value Pr(>|z|)
## (Intercept)  0.85084    1.23499   0.689   0.491
## age        -0.02747    0.04237  -0.648   0.517
##
## (Dispersion parameter for binomial family taken to be 1)
##
##      Null deviance: 80.336  on 57  degrees of freedom
## Residual deviance: 79.913  on 56  degrees of freedom
## AIC: 83.913
##
## Number of Fisher Scoring iterations: 3
```

```
exp(summary(model6)$coefficients)
```

```
##              Estimate Std. Error z value Pr(>|z|)
## (Intercept)  1.3038660    1.557246  1.820402  1.731754
## baseline    0.9932876    1.012313  0.576752  1.789765
```