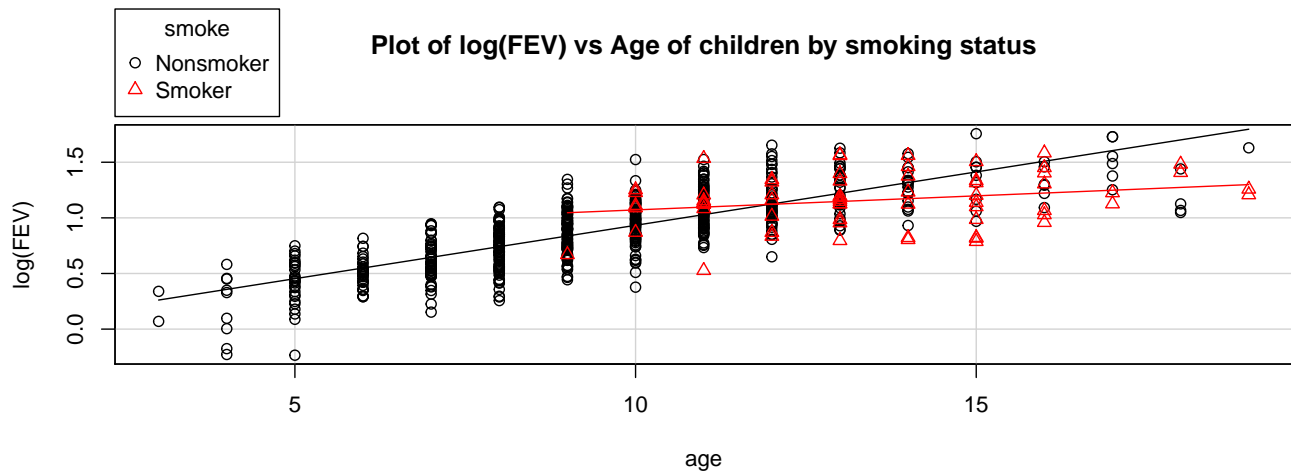
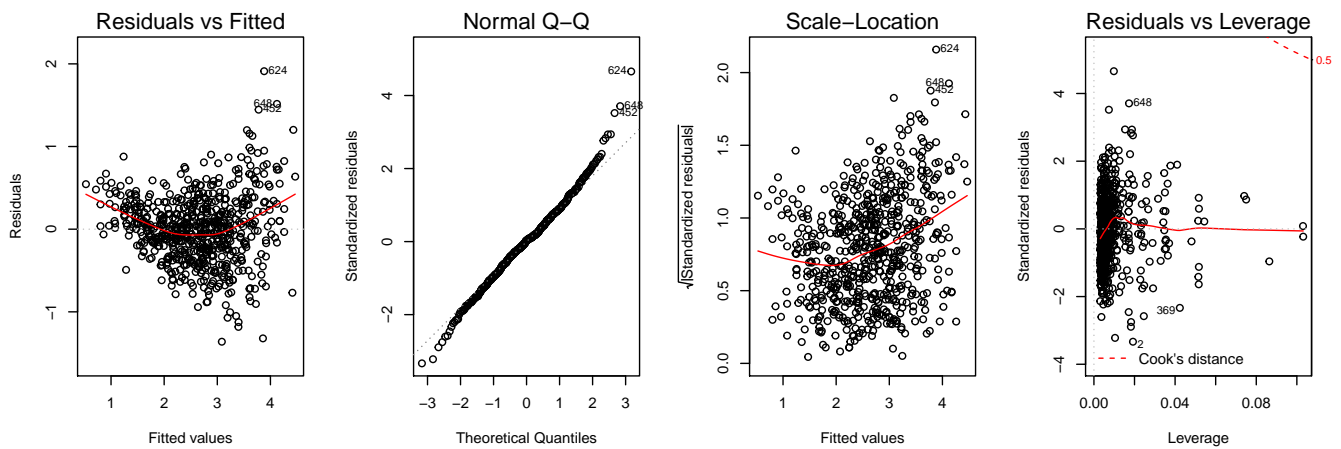


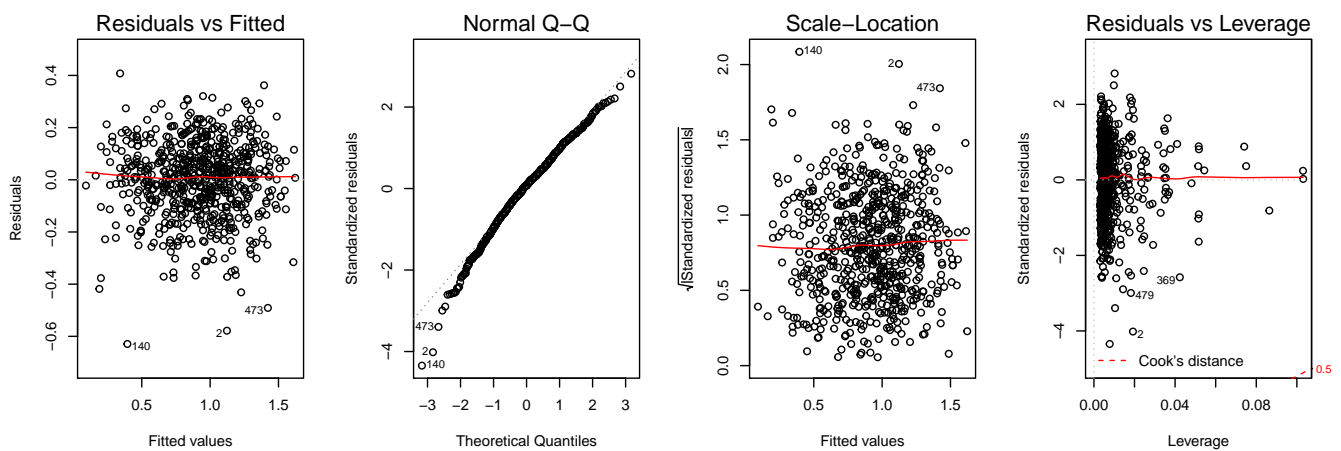
STAT 217: MLR models and AIC (4-24)



Diagnostics for FEV model (no log)



Diagnostics for full FEV model



```
##
## Call:
## lm(formula = log(FEV) ~ height + age * smoke + sex, data = FEV)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -0.6293 -0.0878  0.0114  0.0966  0.4075
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)  -1.91949    0.08057  -23.82  <2e-16
## height        0.04207    0.00176   23.91  <2e-16
## age           0.02537    0.00364    6.97   8e-12
## smokeSmoker   0.10788    0.11365    0.95  0.3428
## sexMale       0.03087    0.01176    2.62  0.0089
## age:smokeSmoker -0.01167    0.00846   -1.38  0.1686
##
## Residual standard error: 0.145 on 648 degrees of freedom
## Multiple R-squared:  0.811, Adjusted R-squared:  0.81
## F-statistic: 557 on 5 and 648 DF,  p-value: <2e-16
## Analysis of Variance Table
##
## Response: log(FEV)
##           Df Sum Sq Mean Sq F value    Pr(>F)
## height     1    57.7    57.7 2730.58 < 2e-16
## age        1     0.8     0.8   39.48 6.1e-10
## smoke      1     0.1     0.1    5.85  0.016
## sex        1     0.1     0.1    6.27  0.013
## age:smoke  1     0.0     0.0    1.90  0.169
## Residuals 648    13.7     0.0
##
## Call:
## lm(formula = log(FEV) ~ height + age + smoke + sex, data = FEV)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -0.6328 -0.0866  0.0115  0.0954  0.4070
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept) -1.94400    0.07864  -24.72  < 2e-16
## height       0.04280    0.00168   25.49  < 2e-16
## age          0.02339    0.00335    6.98  7.1e-12
## smokeSmoker -0.04607    0.02091   -2.20   0.028
## sexMale      0.02932    0.01172    2.50   0.013
##
## Residual standard error: 0.145 on 649 degrees of freedom
## Multiple R-squared:  0.811, Adjusted R-squared:  0.809
## F-statistic: 695 on 4 and 649 DF,  p-value: <2e-16
##      df  AIC
## fm1    7 -659
## fm1R   6 -659
```