

# Challenge 1 Answer Key

**1. Create the following scatterplot using plot(). (5 points)**

```
plot(NHANES$BMI~NHANES$Age, main = "BMI given Age")
```

*2 Points: BMI first*

*2 Points: Age second*

*1 Point: Title*

*(take off 2 points if variables switched)*

**2. Create the following more decorated scatterplot using plot(). (5 points)**

```
plot(NHANES$BMI~NHANES$Age, main = "BMI given Age",  
     sub = "Subtitle: Values shown are from the NHANES Dataset",  
     xlab = "Age", ylab = "BMI", col.lab = "blue", col.main = "violet")  
points(NHANES$Age, NHANES$BMI, col = "red")
```

*1 point: Same variables and title as last time*

*1 point: Subtitle*

*1 point: Axis labels*

*0.5 points: Axis labels blue*

*0.5 points: Title label violet*

*1 point: Points red*

*(take off 0.5 for any minor errors)*

**3. Create the following graph using ggplot(). (10 points)**

```
ggplot(NHANES, aes(Age, BMI, color = Gender)) +  
  facet_grid(.~Education) + geom_point() +  
  ggtitle("BMI given Age faceted by Education, colored by Gender") +  
  xlab("Age in Years") + ylab("Body Mass Index")
```

*2 points: Variables in correct order*

*2 points: Color by Gender*

*2 points: Facet by Education*

*1 point: geom\_point()*

*1 point: Title*

*1 point: X-axis label*

*1 point: Y-axis label*

*(take off 0.5 for any minor error)*