Quiz2

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x	y
22	497
26	541
27	556
33	576
29	578
29	607
34	662
30	739
40	805

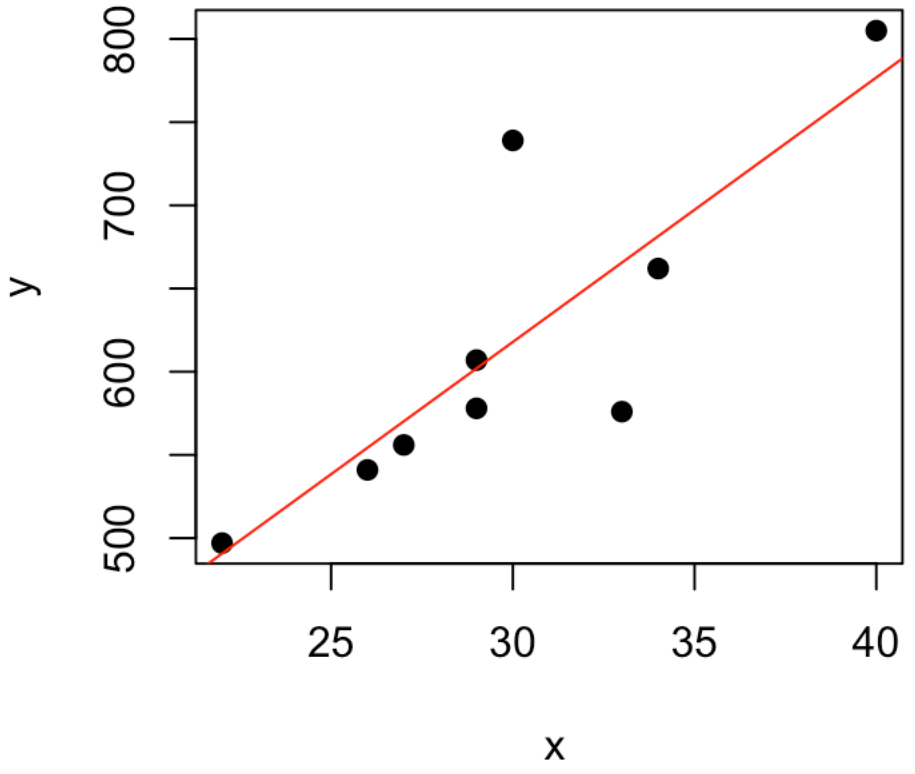
a. Look at a scatterplot of the data. Does it appear that a simple linear model is appropriate?

Yes.

We can also check the correlation, to check if the two variables are linearly associated.

Cor:

```
## [1] 0.8287317
```



b. Which variable, X or Y, is the "response" variable in this problem? Which is the "explanatory" or "predictor" variable?

The response variable is the dependent variable, which is *Y* in this problem. *X* is the predictor variable or explanatory variable. *X* is the independent variable.

c. What is the equation of the regression line? (Round the slope and y-intercept to one decimal place.)

The estimated regression line equation is: ***y = 141.08 + 15.89x***

```
##
## Call:
## lm(formula = y ~ x)
##
## Coefficients:
## (Intercept)            x
##      141.08         15.89
```

```
##
## Call:
## lm(formula = y ~ x)
##
## Residuals:
##     Min      1Q  Median      3Q     Max
## -89.569 -19.463 -13.315   6.259 121.111
##
## Coefficients:
##             Estimate Std. Error t value Pr(>|t|)
## (Intercept)  141.083    123.312   1.144  0.29019
## x             15.894      4.057   3.918  0.00576 **
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 59.62 on 7 degrees of freedom
## Multiple R-squared:  0.6868, Adjusted R-squared:  0.6421
## F-statistic: 15.35 on 1 and 7 DF,  p-value: 0.005765
```

d. Use the regression line to predict the value of Y when X = 31.

```
## [1] 633.67
```