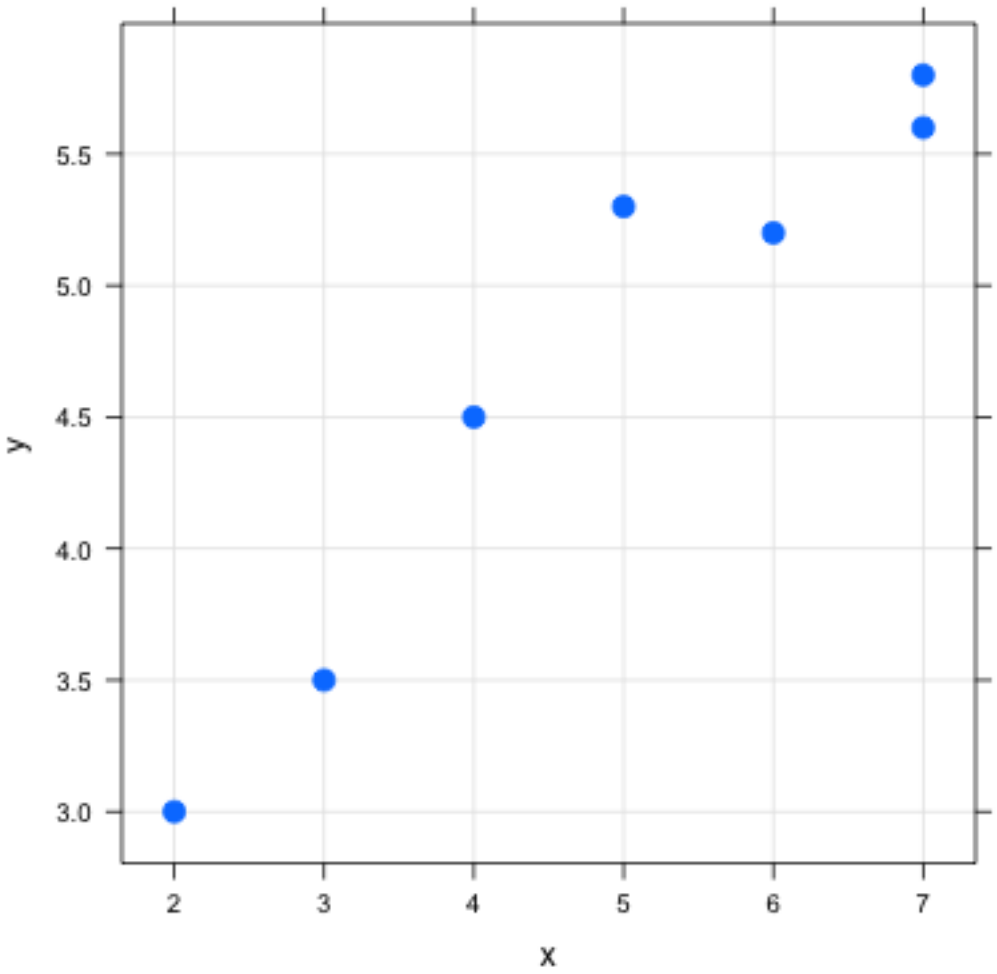
Applied Statistics HW 8

1. Last time we considered the following data

x	2	3	4	5	6	7	7
y	3	3.5	4.5	5.3	5.2	5.8	5.6

Here is a scatterplot of these two variables:



The basic parameters are given in the following table:

$\bar{x}$	$\bar{y}$	s_x	s_y	r
4.857	4.7	1.952	1.08	0.964

a. Compute the equation for the least square regression line, and draw it on the graph.

b. Compute the residuals and the overall error the line is making (the sum of squared residuals).

c. Draw the residual plot.

d. What percent of the variance of y is explained by this regression line? (remember, r^2 measures that)

e. Peter wants to use the line $y = 2 + 0.5x$ instead, because it is easier to work with. Compute the sum of squared residuals for Peter's line. How is he doing?