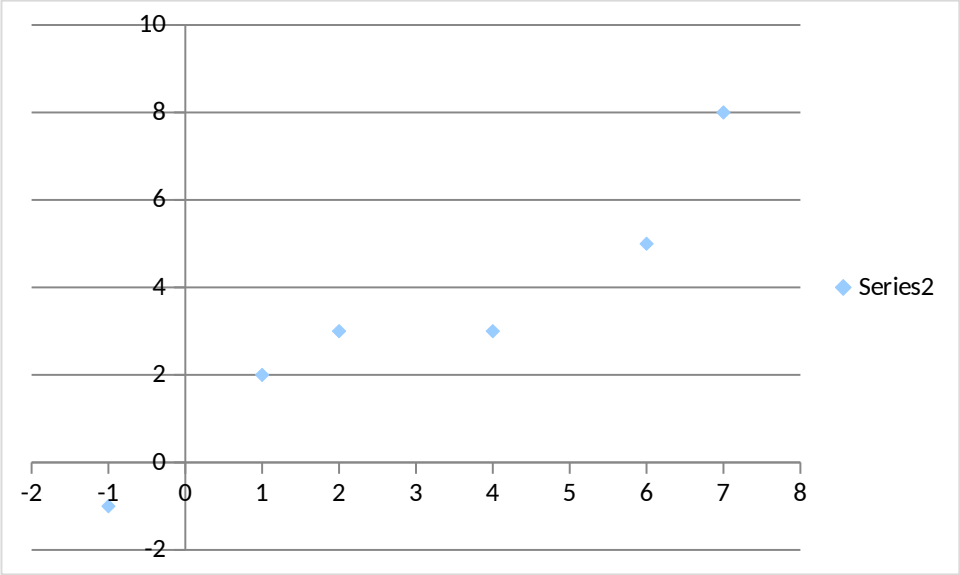
Simple Linear Regression and Correlation Class|Ryusei Takahashi

a) Create a scatter plot from the data and explain the results.



X is independent variable and y is dependent variable.

There is positive relationship between x and y.

What are the null and alternative hypotheses?

Ho: r≤0

Ha: r>0

b) Determine the correlation coefficient.

Correlation coefficient r= 0.97684

c) Find the regression straight line y=ax+b

$a=\sum(x-\bar{x})(y-\bar{y})/\sum(x-\bar{x})^2=0.882155$

$b=\bar{y}-b_1\bar{x}$ =1.127946

Therefore, a=0.8821, b=1.128,

$\hat{y}=a\,x+b=0.882155\,x+1.127946$

d) If the stock earn an x of 5, what is their predicted stock? Find y for x=5.

$$\hat{y} = b_0 + b_1 x = 1.127946 + 0.882155\, x = 1.127946 + 0.882155 * 5 = 5.538721$$

Therefore, predicted stock is 5.54 when stock earn is 5.