

Solutions for Math 148 Quiz Three Version C

1. True or false:

(a) Chance error can be estimated by repeated measurements.

True

(b) A cloud which slopes up indicates a positive association.

True

(c) If you multiply each value of one variable by the number -1 then the correlation coefficient will be unchanged.

False

2. Calculate the correlation coefficient from the data in the following table. For your convenience, you may use that $\bar{x} = 3$, $SD_x = 1.41$, $\bar{y} = 4$, $SD_y = 1.41$.

Don't just give the result but a table and a formula with the values plugged in.

x	1	2	3	4	5
y	2	3	4	5	6

SU for x : -1.41, -0.71, 0, 0.71, 1.41 SU for y : -1.41, -0.71, 0, 0.71, 1.41

The product: 2,0.5,0,0.5,2

The correlation coefficient is: $\frac{2+0.5+2+0.5}{5} = 1$

3. Suppose the correlation coefficient between x and y is 0.6.

(a) Does the scatter diagram slope up or down?

Slope up.

(b) If you multiply all the x values by 0.5, what happens to the correlation coefficient?

Remain the same.

(c) If both SD of x and SD of y increase, how does the scatter diagram change?

Remain the same shape.