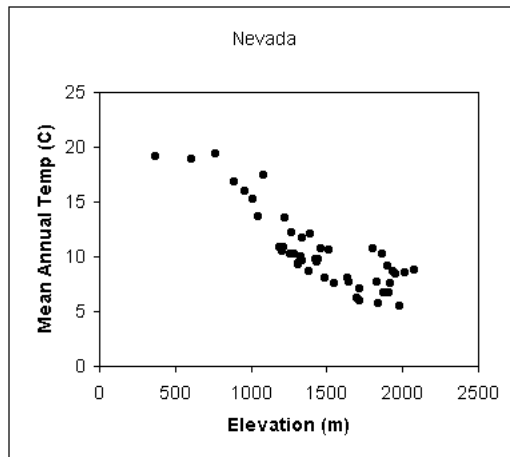


WORKSHEET 10 & 13

1. From the following scatter plot, the relationship can be described as:



- A) Strong positive
- B) Strong negative
- C) Perfect negative
- D) Perfect positive

2. Which of the following values cannot represent a correlation coefficient?

- A) $r = 1.08$
- B) $r = 0.95$
- C) $r = 0$
- D) $r = -1.0$

3. Compute the value of Pearson product moment correlation coefficient for the data below:

X	-2	-5	3
Y	7	-1	2

- A) $r = 0.002$
- B) $r = 0.235$
- C) $r = -0.235$
- D) $r = -0.002$

4. The range of the correlation coefficient (r) is

- A) $-1 < r < 1$
- B) $0 \leq r \leq 1$
- C) $-1 \leq r \leq 0$
- D) $-1 \leq r \leq 1$

5. If the differences between the ranks of two variables are $(-1, -4, 2, 1, -2, 2, 2)$, find Spearman rank correlation coefficient.

- A) $r_s = -0.607$
- B) $r_s = 0.393$
- C) $r_s = -0.393$
- D) $r_s = 0.607$

6. Compute Spearman rank correlation coefficient for the following data:

Variable 1	6	7	5	4	3	1
Variable 2	-1	9	2	3	4	7

- A) -0.143
- B) -0.116
- C) -1.143
- D) 0.143

Use the following to answer questions (7 and 8)

A researcher has formed the relationship between the height in centimeters (x) and the weight in kilograms (y) by the following regression line equation:

$$y' = -5.13 + 0.467x$$

7. Predict the weight of a person whose height is 169 cm.

- A) 78.804
- B) 84.053
- C) 77.923
- D) 73.793

8. For each increase of the height by one centimeter, the weight

- A) decreases 5.13 kilograms on average.
- B) increases 5.13 kilograms on average.
- C) increases 0.467 kilograms on average.
- D) decreases 0.467 kilograms on average.

9. A researcher wants to determine if there is a relationship between the number of hours a person goes without sleeping (x) and the number of mistakes he makes on a simple test (y).

The following data are recorded:

$$n = 10, \sum x = 50, \sum y = 20, \sum xy = 114, \sum x^2 = 300$$

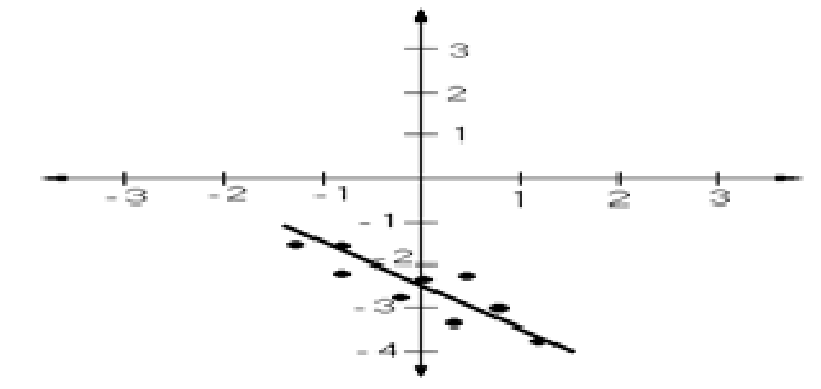
The equation of the regression line is:

- A) $y' = 0.6 + 0.28x$
- B) $y' = 0.28 - 0.6x$
- C) $y' = -0.6 + 0.28x$
- D) $y' = 0.28 + 0.6x$

10. If the equation of the regression line is $y' = -0.3x + 0.4$, then the correlation coefficient between the two variables will be

- A) positive
- B) -0.3
- C) negative
- D) 0.4

11. Determine the regression line equation from the following graph:



- A) $y' = -1.8 - 2.5x$
- B) $y' = -2.5 - 1.8x$
- C) $y' = -2.5 + 1.8x$
- D) $y' = 1.8 - 2.5x$

12. The equation of the regression line between the age of a car in years (x) and its price in Riyals (y) is given by:

$$y' = 65.3 - 9.25x$$

The correct statement that represents this equation is:

- A) When the age of the car increases one year, its price decreases (65.3) Riyals on average.
- B) When the price of the car increases one Riyal, the age decreases (9.25) years on average.
- C) When the age of the car increases one year, its price decreases (9.25) Riyals on average.
- D) When the price of the car increases one Riyal, the age decreases (65.3) years on average.

Answer Key:

1. B
2. A
3. B
4. D
5. B
6. A
7. D
8. C
9. A
10. C
11. B
12. C