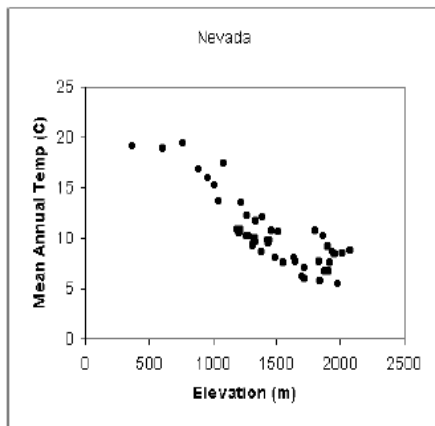


## Worksheet chapter (10,13)

1. From the following scatter plot of elevation and temperature, the relationship can be described as:



- A) Strong Positive  
B) Strong Negative  
C) No relationship  
D) Weak Positive
2. Which of the following values could not represent a correlation coefficient?  
A)  $r = 1.08$   
B)  $r = 0.95$   
C)  $r = -0.73$   
D)  $r = -1.0$
3. Compute the value of the Pearson product moment correlation coefficient for the data below:

X values	-2	-3	5
Y values	7	-1	2

- A)  $r = +0.028$   
B)  $r = -0.224$   
C)  $r = -0.789$   
D)  $r = -0.028$
4. The range of the person correlation coefficient value( $r$ ) is.....  
A)  $0 < r < 1$   
B)  $0 \leq r \leq 1$   
C)  $0 \leq r < 1$   
D)  $-1 \leq r \leq 1$
5. If  $n=6$ ,  $\sum x = 7$ ,  $\sum y = 5$ ,  $\sum xy = 20$ ,  $\sum x^2 = 15$ ,  $\sum y^2 = 50$ . The value of the person correlation coefficient is  
A) 0.9  
B) 0.6  
C) 0.8  
D) -0.7

6. If the different between the ranks of two variables are  $(-1, -4, 2, 1, -2, 2, 2)$ , find the value of the correlation coefficient ?

- A)  $r_s = 0.886$
- B)  $r_s = 0.393$
- C)  $r_s = -0.393$
- D)  $r_s = 0.634$

7. for the following data table, what's the Spearman rank correlation coefficient :

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

- A) -0.143
- B) -0.257
- C) 0.143
- D) 0.257

A store manager has found there is a relationship between the age(x), of her employees and the number of sick days(y), they take each year. If the equation of the regression line is:

$$y' = 21.1 - 0.317x$$

Answer Questions (8-9)

8. Predict the number of sick days the employee takes each year if her age is 35 years.

- A) 10
- B) 23
- C) 20
- D) 13

9. For each increase of the age of the employee by one year, then the number of sick days he or she takes each year.

- A) decreases by 0.317 on average.
- B) increases by 0.317 on average.
- C) increases by 21.1 on average.
- D) decreases by 21.1 on average.

10. If a researcher wants to determine a linear relationship between the number of hours a person goes without sleep and the number of mistakes he makes on a simple test. The following data is recorded.  $n = 10, \sum x = 50, \sum y = 20, \sum xy = 114$  and  $\sum x^2 = 300$

The equation of the regression line is:

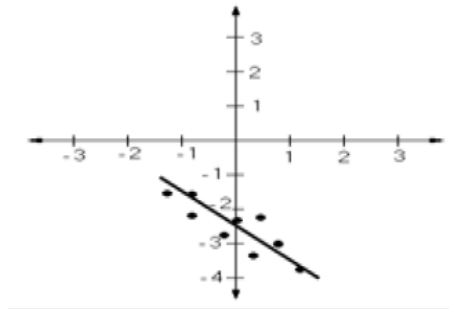
- A)  $y' = -0.6 + 0.28x$ .
- B)  $y' = 0.28 - 0.6x$ .
- C)  $y' = 0.6 + 0.28x$ .
- D)  $y' = 0.28 + 0.6x$ .

11. If the equation for the regression line is  $y = -3x + 4$ , then the sign of the correlation coefficient between the two variables is

- A) Positive
- B)  $-3$
- C) Negative
- D) Cannot be determined

12. The following graph represents ....

- A)  $y' = 0.5 - x$
- B)  $y' = -1.5 + x$
- C)  $y' = -2.5 + x$
- D)  $y' = -2.5 - x$



13. The equation of the regression line between the age of a car in years(x) and its price (y); is given by:  $Y=65.3-9.25x$ . The correct statement to represent this equation is :

- A) When the age of the car increases by one year the price of it decreases by (65.3) Riyals on average
- B) When the price of the car increases by one Riyals the age of the car decreases by (9.25) years on average
- C) When the age of the car increases by one year the price of it decreases by (9.25)
- D) When the price of the car increases by one Riyals the age of the car decreases by (65.3) on average

14. If the regression line is  $y' = -3.5 + 0.78x$  the slope is

- A) 3.5
- B) 0.78
- C) -3.5
- D) -0.78

## **Answer Key:**

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