

# Scatter plots Assignment

Answer the following questions

1. What are Scatter plots used for?

\_\_\_\_\_.

2. Define Correlation.

\_\_\_\_\_.

3. What is Positive Correlation?

\_\_\_\_\_.

4. What is Negative Correlation?

\_\_\_\_\_.

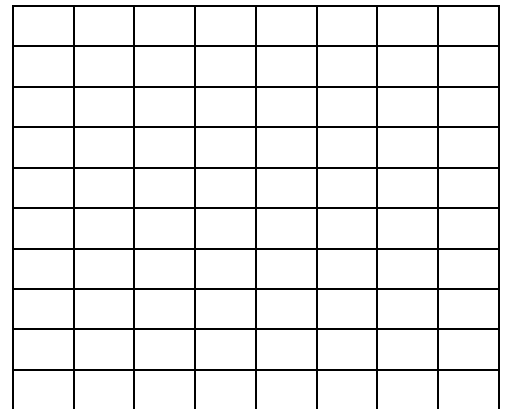
To answer questions 5-6 use the following table that shows years of experience and Income (in thousands).

Years of experience	1	3	5	7	10	14	17	20	25	30
Income (in thousands)	15	22	30	33	35	40	42	45	48	50

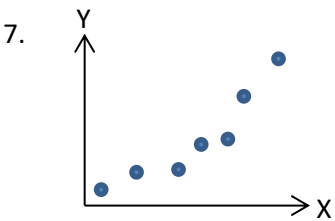
5. Draw a scatter plot of the data and draw in the line of best fit.

6. Is there positive, negative or no correlation?

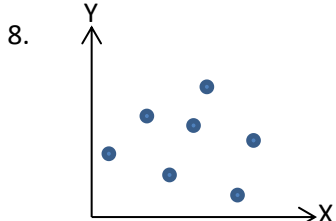
\_\_\_\_\_.



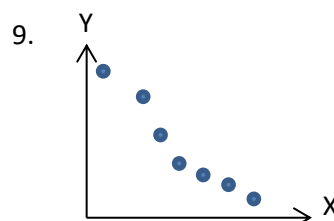
What type of correlation positive, negative or no correlation is shown by each scatter plot? (7-9)



\_\_\_\_\_.



\_\_\_\_\_.



\_\_\_\_\_.

# Scatter plots Assignment

## Fill in the Blanks (10- 12)

10. When there is no linear dependency between the variables then there is \_\_\_\_\_ correlation.

11. A \_\_\_\_\_ is a straight line that represents the data on a scatter plot in best way.

12. \_\_\_\_\_ Correlation is a correlation in which points are located closer to one another on the line.

To answer the question 13-15 use the following table.

x	1	2	1	3	2	4	3	4	5	6	5	6
y	20	25	30	30	35	35	40	45	45	55	55	65

13. Draw a scatter plot of the data and draw in the line of best fit.

14. Is there positive, negative or no correlation?

\_\_\_\_\_.

15. What is the equation of line of best fit?

\_\_\_\_\_.


# Scatter plots Assignment

## ANSWERS

Answer the following questions

1. What are Scatter plots used for?

Scatter plots are used to **plot data points** on a horizontal axis (x-axis) and a vertical axis (y-axis) in the effort to explain to what extent one variable is affected by another variable.

2. Define Correlation.

The relationship between two variables is called their **Correlation**.

3. What is Positive Correlation?

When increase in value of one variable **increases** the value of other variable it is known as Positive Correlation.

4. What is Negative Correlation?

When increase in value of one variable **decreases** the value of other variable it is known as Negative Correlation.

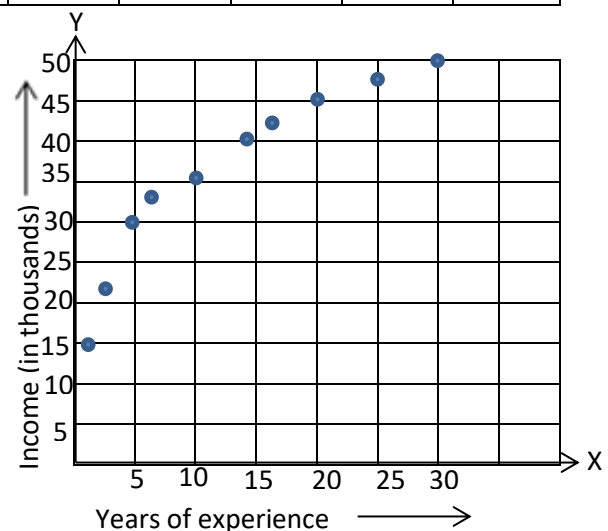
To answer questions 5-6 use the following table that shows years of experience and the Income (in thousands).

Years of experience	1	3	5	7	10	14	17	20	25	30
Income (in thousands)	15	22	30	33	35	40	42	45	48	50

5. Draw a scatter plot of the data.

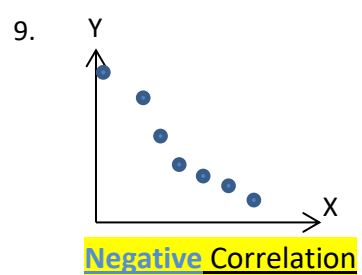
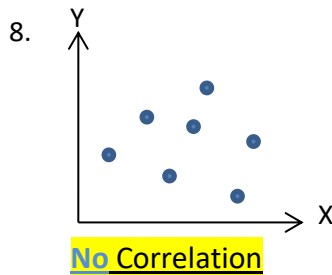
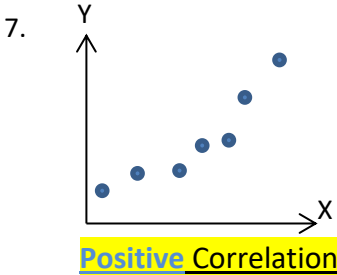
6. Is there positive, negative or no correlation?

**Positive Correlation**



# Scatter plots Assignment

What type of correlation positive, negative or no correlation is shown by each scatter plot? (7-9)



Fill in the Blanks (10- 12)

10. When there is no linear dependency between the variables then there is No correlation.

11. A Line of best fit is a straight line that represents the data on a scatter plot in best way.

12. Strong Correlation is a correlation in which points are located closer to one another on the line.

# Scatter plots Assignment

To answer the question 13-15 use the following table.

x	1	2	1	3	2	4	3	4	5	6	5	6
y	20	25	30	30	35	35	40	45	45	55	55	65

13. Draw a scatter plot of the data and draw in the line of best fit.

14. Is there positive, negative or no correlation?

**Positive Correlation**

15. What is the equation of line of best fit?

$$m = \frac{\text{change in } y}{\text{change in } x}$$

$$m = \frac{60-30}{6-2} = \frac{30}{4} = \frac{15}{2}$$

$$y = mx + c$$

$$60 = \left(\frac{15}{2}\right)(6) + c$$

$$c = 15$$

$$y = mx + c$$

$$y = \frac{15}{2}x + 15$$

$$2y = 15x + 30$$

