

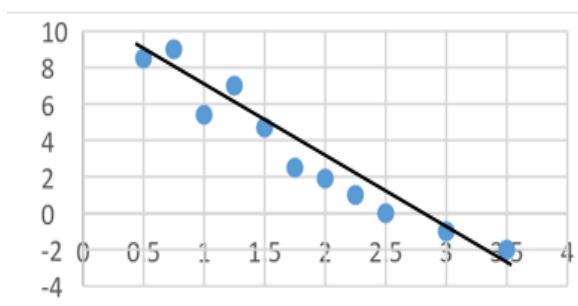
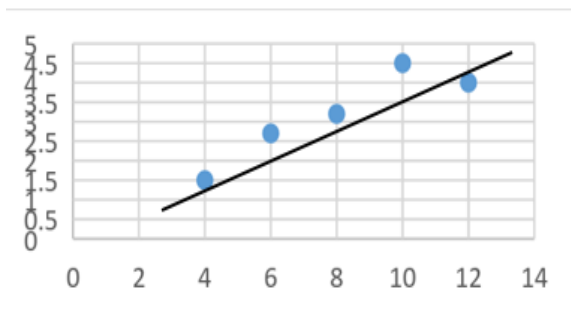
Linear Regression Pre-Quiz **Answer Key**

Instructions: Answer all questions. You will use all these skills during the activity.

1. Define “line of best fit”:

A line of best fit is a straight line that best represents the data on a scatter plot. This line may pass through some of the points, none of the points, or all of the points.

2. Draw a line of best fit for the following scatter plots:



3. Find the equation of the line through the following points:

- a. (-1, -10) and (3, 2)

$y = 3x - 7$

- b. (2, 5) and (-4, 2)

$y = (1/2)x + 4$

4. A ball is rolled down a hallway and its position is recorded at five different times. Use the data in the table below to predict the location of the ball at 12 seconds. Answer: **42 meters**

Time (seconds)	Position (meters)
1	9
2	12
4	17
6	21
8	26

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5. Calculate the average speed of the ball in question 4. Show your work.

$$\text{Answer: } (26\text{m} - 9\text{m}) / (8\text{s} - 1\text{s}) = 17\text{m} / 7\text{s} = 2.4 \text{ m/s}$$

6. A car accelerates from a standstill to 60 m/s in 10 seconds. What is the acceleration?

$$\text{Answer: } (60 \text{ m/s} - 0 \text{ m/s}) / 10\text{s} = 6 \text{ m/s}^2$$

7. A car accelerates from 25 km/hr to 55 km/hr in 30 seconds. What is its acceleration?

$$\text{Answer: } (55 \text{ km/hr} - 25 \text{ km/hr}) / 30\text{s} = 1 \text{ m/s}^2$$