**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.

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



1. Find the equation of the line through the following points:
	1. (-1, -10) and (3, 2)

y= 3x - 7

* 1. (2, 5) and (-4, 2)

y= (1/2)x + 4

1. 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 |

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

Answer: (26m – 9m)/ (8s – 1s) = 17m /7s = 2.4 m/s

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

Answer: (60 m/s -0 m/s)/10s = 6 m/s2

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

Answer: (55 km/hr -25 km/hr)/30s = 1 m/s2