

13.4.1: The Regression Equation (Exercise)

Use the following information to answer the next five exercises. A random sample of ten professional athletes produced the following data where x is the number of endorsements the player has and y is the amount of money made (in millions of dollars).

x	y	x	y
0	2	5	12
3	8	4	9
2	7	3	9
1	3	0	3
5	13	4	10

? Exercise 12.4.2

Draw a scatter plot of the data.

? Exercise 12.4.3

Use regression to find the equation for the line of best fit.

Answer

$$\hat{y} = 2.23 + 1.99x$$

? Exercise 12.4.4

Draw the line of best fit on the scatter plot.

? Exercise 12.4.5

What is the slope of the line of best fit? What does it represent?

Answer

The slope is 1.99 ($b = 1.99$). It means that for every endorsement deal a professional player gets, he gets an average of another \$1.99 million in pay each year.

? Exercise 12.4.6

What is the y -intercept of the line of best fit? What does it represent?

? Exercise 12.4.7

What does an r value of zero mean?

Answer

It means that there is no correlation between the data sets.

? Exercise 12.4.8

When $n = 2$ and $r = 1$, are the data significant? Explain.

? Exercise 12.4.9

When $n = 100$ and $r = -0.89$, is there a significant correlation? Explain.

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