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## Practice

### Fitting Lines

#### 1. Technology required.

$x$	$y$
83	102
87	115
91	107
93	122
97	125
97	127
101	120
104	127

- a. Use graphing technology to create a scatter plot and find the best fit line.

- b. What does the best fit line estimate for the  $y$  value when  $x$  is 100?

**2. Technology required.**

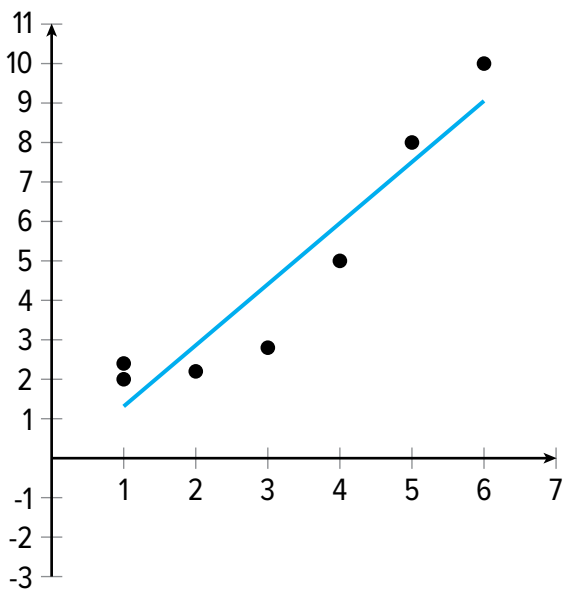
$x$	$y$
2.3	6.2
2.8	5.7
3.1	4.7
3	3.2
3.5	3
3.8	2.8

- a. What is the equation of the line of best fit? Round numbers to 2 decimal places.
  
- b. What does the equation estimate for  $y$  when  $x$  is 2.3? Round to 3 decimal places.
  
- c. How does the estimated value compare to the actual value from the table when  $x$  is 2.3?
  
- d. How does the estimated value compare to the actual value from the table when  $x$  is 3?

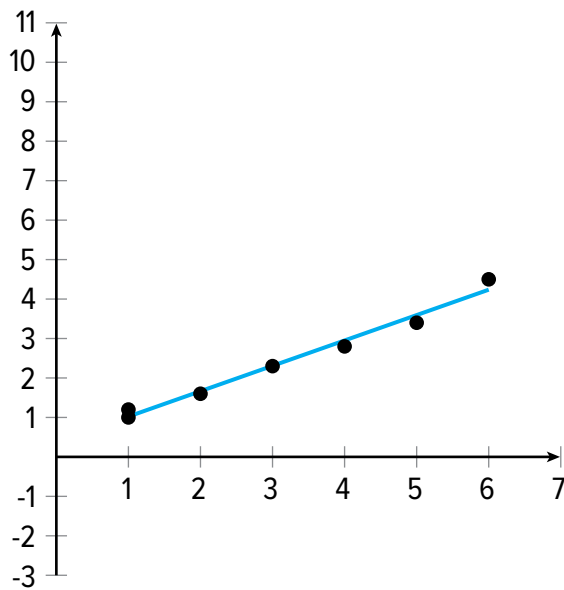
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3. Which of these dot plots are best fit by the shown linear model?

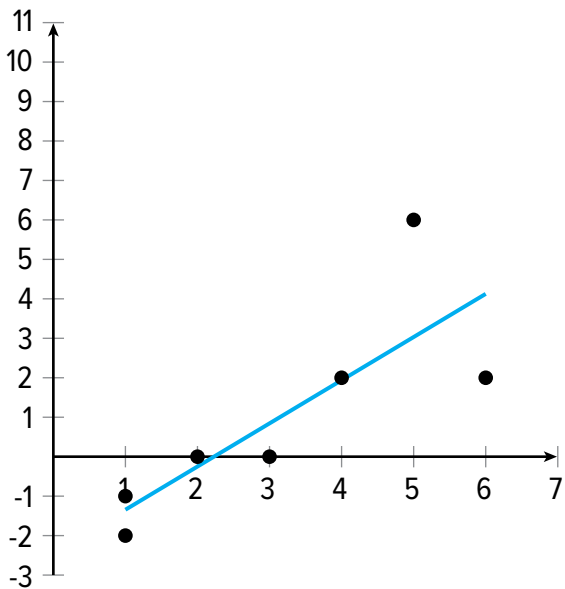
(A.)



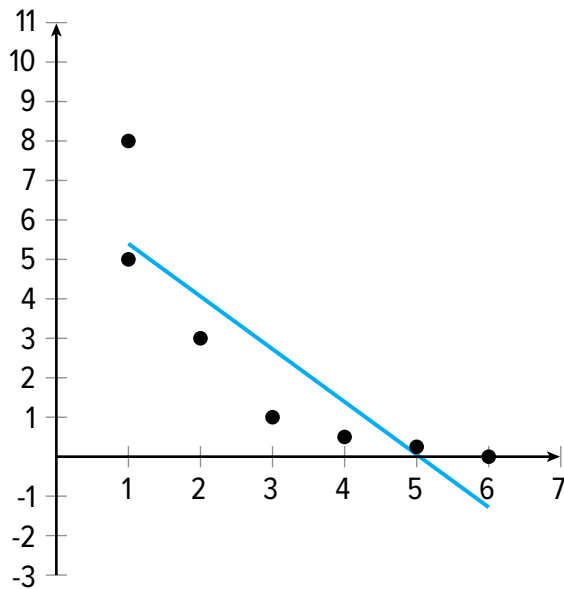
(B.)



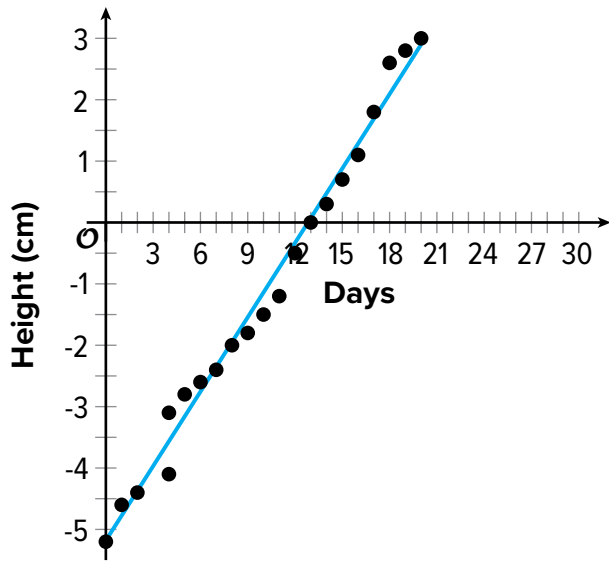
(C.)



(D.)



4. A seed is planted in a glass pot and its height is measured in centimeters every day. (Lesson 3-4)

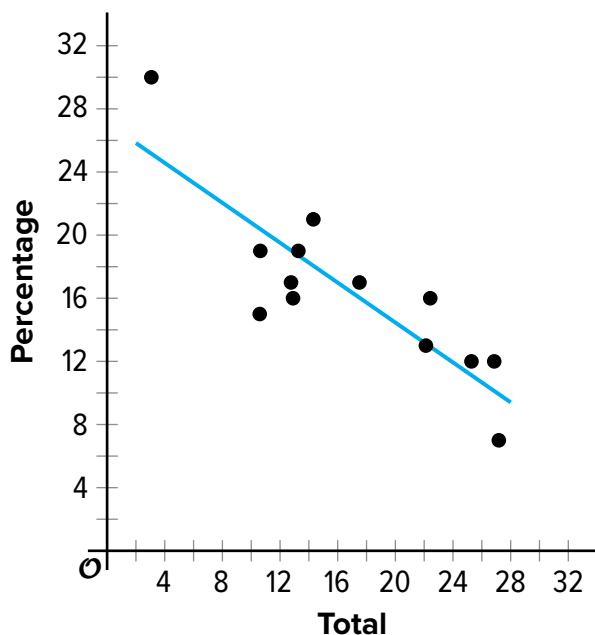


The best fit line is given by the equation  $y = 0.404x - 5.18$ , where  $y$  represents the height of the plant above ground level, and  $x$  represents the number of days since it first sprouted.

- a. What is the slope of the best fit line? What does the slope of the line mean in this situation? Is it reasonable?
- b. What is the y-intercept of the best fit line? What does the y-intercept of the line mean in this situation? Is it reasonable?

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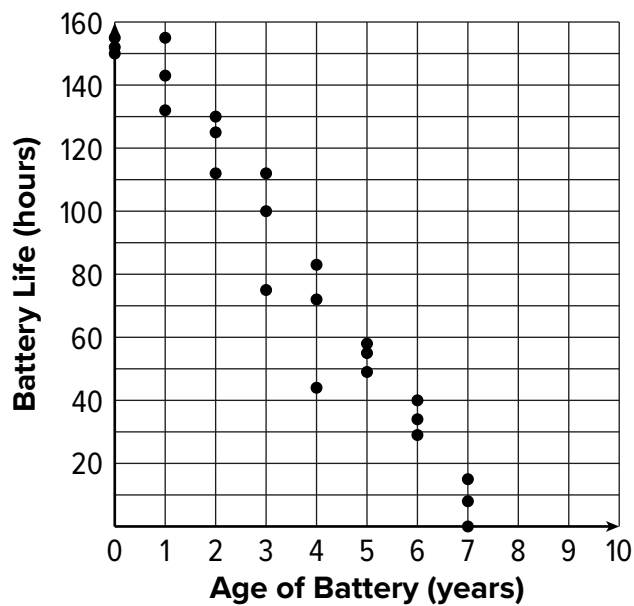
5. At a restaurant, the total bill and the percentage of the bill left as a tip is represented in the scatter plot. (Lesson 3-4)



The best fit line is represented by the equation  $y = -0.632x + 27.1$ , where  $x$  represents the total bill in dollars, and  $y$  represents the percentage of the bill left as a tip.

- What does the best fit line estimate for the percentage of the bill left as a tip when the bill is \$15? Is this reasonable?
- What does the best fit line predict for the percentage of the bill left as a tip when the bill is \$50? Is this reasonable?

6. A recent study investigated the amount of battery life remaining in alkaline batteries of different ages. The scatter-plot shows this relationship between the different alkaline batteries tested. (Lesson 3-4)



The scatter plot includes a point at (7, 15). Describe the meaning of this point in this situation.