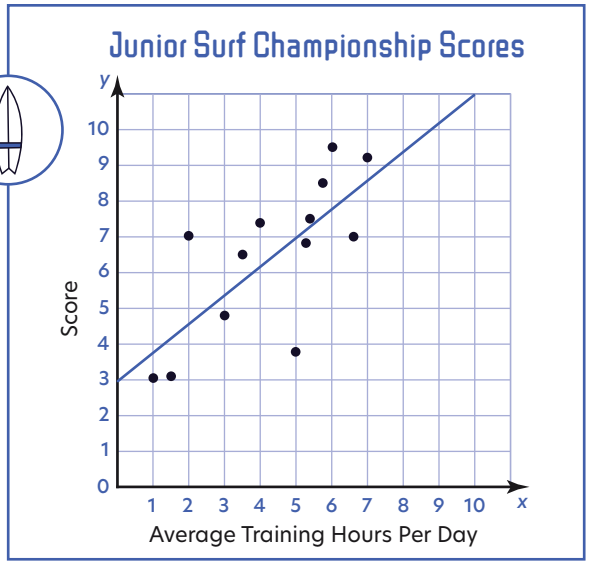
Interpreting Slopes and *y*-Intercepts of Lines of Best Fit

Read each scenario and look at the scatter plot and given line of best fit. Then answer the questions.

1. At the Junior Surf Championship, judges scored each surfer's performance from 0 to 10. The scatter plot shows the relationship between the average number of hours spent training each day in the week leading up to the competition and the competition scores.



a. Write the equation of the line of best fit in slope-intercept form. $y = \frac{4}{5}x + 3$

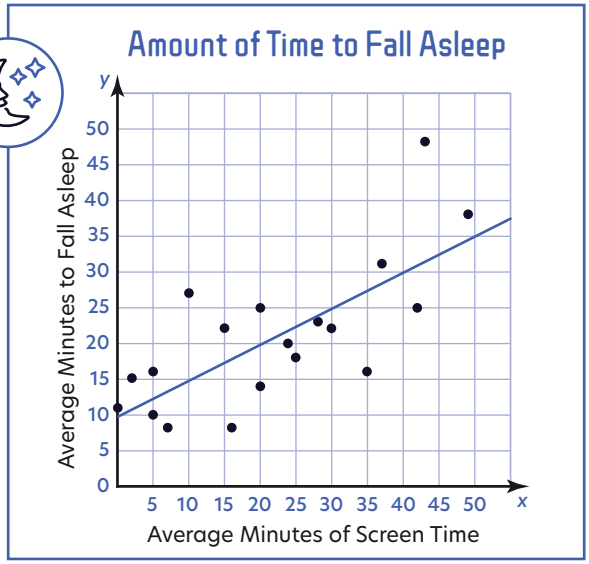
b. What is the slope? $\frac{4}{5}$ What does the slope mean in terms of the scenario?

For every 5 additional hours of training per day, you could expect a surfer's score to increase by 4.

c. What is the *y*-intercept? 3 What does the *y*-intercept mean in terms of the scenario?

You could expect a surfer who trained for an average of 0 hours to earn a score of 3.

2. Dr. Lee led a study about the effect of screen time on the time it takes to fall asleep. The scatter plot below shows the average number of minutes of screen time study participants had in the hour leading up to bed and the average number of minutes it took them to fall asleep.



a. Write the equation of the line of best fit in slope-intercept form. $y = \frac{1}{2}x + 10$

b. What is the slope? $\frac{1}{2}$ What does the slope mean in terms of the scenario?

For every 2 additional minutes of screen time in the hour leading up to bed, you could expect it to take 1 additional minute for a study participant to fall asleep.

c. What is the *y*-intercept? 10 What does the *y*-intercept mean in terms of the scenario?

You could expect a study participant with 0 minutes of screen time in the hour leading up to bed to fall asleep in 10 minutes.

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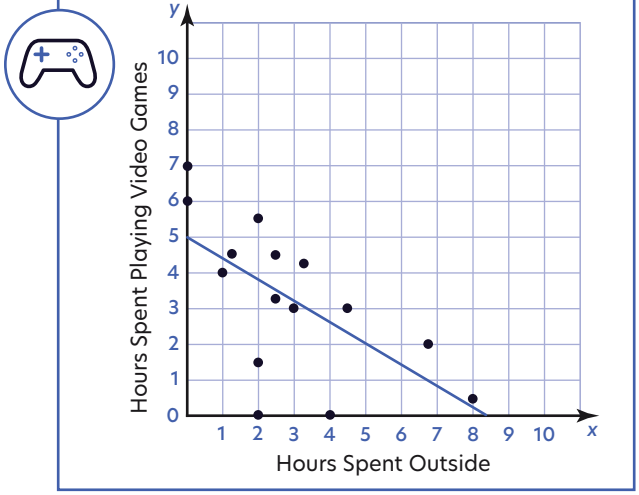
Keep going! Read each scenario and look at the scatter plot and given line of best fit. Then answer the questions.

3. A group of Gilford Middle School students took a survey about how they spend their time. They answered the survey questions based on their activities from the previous day. The scatter plot shows the relationship between the amount of time students spent outside and the amount of time they spent playing video games.

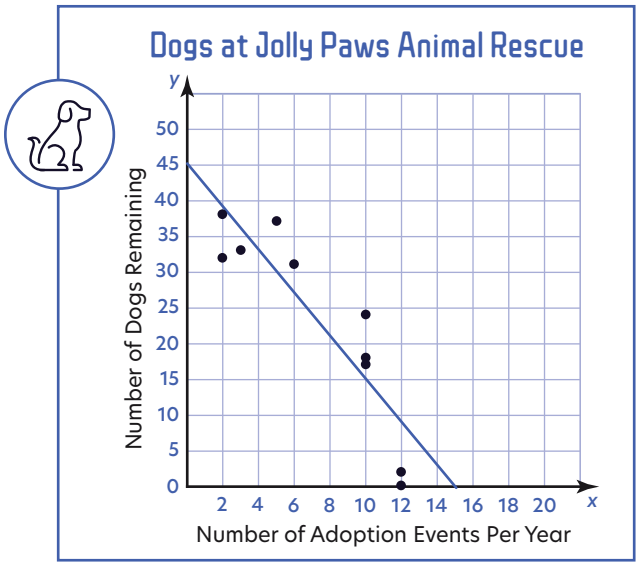


a. Write the equation of the line of best fit in slope-intercept form. $y = -\frac{3}{5}x + 3$

b. What is the slope? $-\frac{3}{5}$ What does the slope mean in terms of the scenario?
For every 5 additional hours spent outside, you could expect a student to spend 3 fewer hours playing video games.

c. What is the *y*-intercept? 5 What does the *y*-intercept mean in terms of the scenario?
You could expect a student who spent 0 hours outside to play 5 hours of video games.

4. Jolly Paws Animal Rescue hosts adoption events to help find homes for dogs. The scatter plot shows the relationship between the number of adoption events they hold each year and the number of dogs remaining at the animal rescue at the end of the year.



a. Write the equation of the line of best fit in slope-intercept form. $y = -3x + 45$

b. What is the slope? −3 What does the slope mean in terms of the scenario?
For each additional adoption event, you could expect 3 fewer dogs to remain at the end of the year.

c. What is the *y*-intercept? 45 What does the *y*-intercept mean in terms of the scenario?
You could expect 45 dogs to remain at Jolly Paws at the end of the year if they hold 0 adoption events.