

SAT Two-Variable Data Worksheet

Name: _____ Date: _____

Circle one answer for each question. Use the blank space for calculations. A calculator is allowed.

- A line of best fit for a set of data is $y = 2.5x + 12$, where x is the number of hours a student studied and y is the student's quiz score. What quiz score does the line predict for a student who studied 6 hours?

A. 15

B. 18

C. 24

D. 27
- A café models its daily hot chocolate sales with $y = -4.2x + 150$, where y is the number of cups sold and x is the day's high temperature, in degrees Fahrenheit. What is the best interpretation of -4.2 in this context?

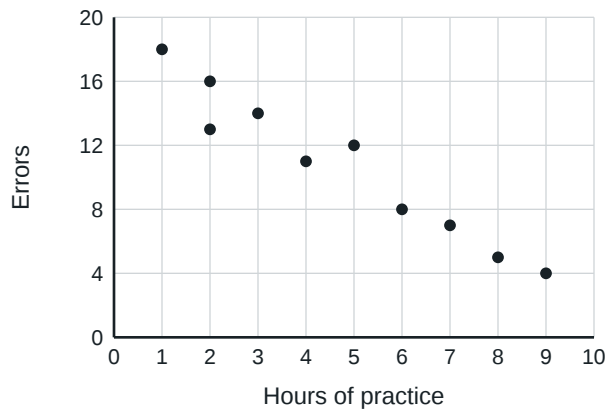
A. The café sells 4.2 cups of hot chocolate each day.

B. For each 1° increase in the high temperature, the model predicts 4.2 fewer cups sold.

C. For each additional cup sold, the model predicts a high temperature 4.2° lower.

D. When the high temperature is 0° , the model predicts 4.2 cups sold.

3.



The scatterplot shows hours of practice and the number of errors on a typing test for 10 students. Which statement best describes the data?

- A. As practice increases, errors tend to increase.
- B. Errors stay about the same as practice increases.
- C. As practice increases, errors tend to decrease.
- D. Every student with more practice made fewer errors than every student with less practice.

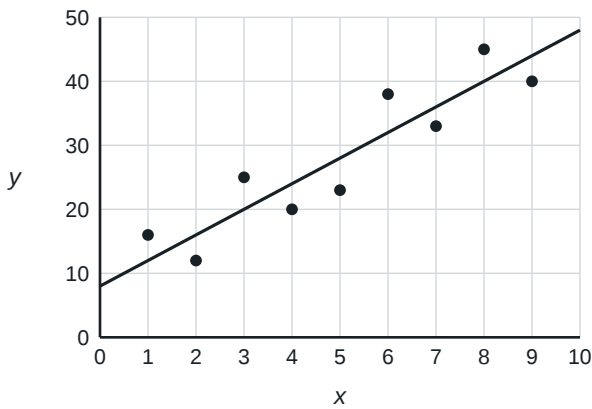
4. **A biologist used data on trees that were 5 to 40 years old to find a line of best fit for tree height and age. For which tree age is a prediction from this line least reliable?**

- A. 8 years
- B. 20 years
- C. 35 years
- D. 90 years

5. **A line of best fit for a data set is $y = 3.1x + 5$. The data set includes the point (10, 38). How much greater is the actual y-value of this point than the y-value the line predicts?**

- A. 2
- B. 3.1
- C. 33
- D. 36

6.



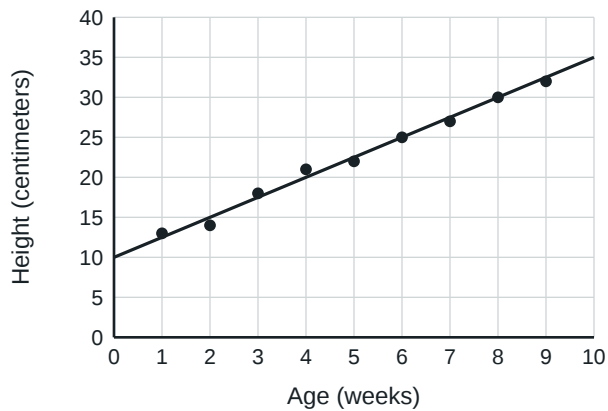
The scatterplot shows 9 data points and a line of best fit. For how many of the data points is the actual y -value greater than the y -value predicted by the line of best fit?

- A. 3
- B. 4
- C. 5
- D. 9

7. A line of best fit for data on used cars is $y = -1,800x + 24,000$, where y is a car's estimated value, in dollars, and x is the car's age, in years. What is the best interpretation of 24,000 in this context?

- A. The estimated decrease in a car's value each year, in dollars
- B. The age, in years, at which a car's estimated value is \$0
- C. The estimated value, in dollars, of a car that is 0 years old
- D. The actual value of every new car in the data, in dollars

8.



The scatterplot shows the age and height of 9 sunflower seedlings, along with a line of best fit. Which equation best represents the line of best fit, where y is the height, in centimeters, and x is the age, in weeks?

- A. $y = 2.5x + 10$
- B. $y = 10x + 2.5$
- C. $y = 0.4x + 10$
- D. $y = -2.5x + 10$

9.

x	y
0	200
1	240
2	288
3	346

The table shows the number of members y in an online group x months after the group started. Which equation best models the data?

- A. $y = 200(1.2)^x$
- B. $y = 200 + 40x$
- C. $y = 200(0.8)^x$
- D. $y = 240(1.2)^x$

10. The function $f(x) = 850(0.92)^x$ models the number of fish in a lake x years after 2020. According to the model, how does the number of fish change each year?
- A. It decreases by 0.92%.
 - B. It decreases by 8%.
 - C. It decreases by 92%.
 - D. It increases by 8%.
11. A scientist models the number of cells in a sample t hours after it was prepared with the function $P(t) = a(b^t)$, for positive constants a and b . The model gives $P(0) = 500$ and $P(2) = 4,500$. What does the model predict for $P(4)$?
- A. 8,500
 - B. 13,500
 - C. 40,500
 - D. 121,500
12. The line of best fit for a data set is $y = 4x + 7$. A new data set is made by adding 3 to every y -value in the original data set and keeping the x -values the same. Which equation is the line of best fit for the new data set?
- A. $y = 4x + 7$
 - B. $y = 7x + 7$
 - C. $y = 12x + 21$
 - D. $y = 4x + 10$