

Spot the Trend

Read scatter plots and describe how two quantities change together.

HIGH SCHOOL • AII-S.ID.6

AII-S.ID.6 "Represent bivariate data on a scatter plot, and describe how the variables' values are related."

NAME _____

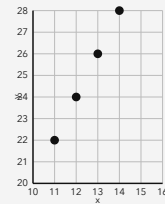
DATE _____

DESCRIBE THE PATTERN

In a scatter plot, look at what happens to y as x increases. A positive trend rises, a negative trend falls, and no association has no clear overall direction.

WORKED EXAMPLE

Use the scatter plot. Describe the relationship between x and y .



1. As x increases by 1, y increases by 2.
2. The points make an upward straight pattern.
3. This is a positive linear relationship.

Answer: Positive linear relationship. For each increase of 1 in x , y increases by 2.

PRACTICE 4 problems

- 1** The points are (2, 1), (3, 3), (4, 5), and (5, 7). Describe the relationship.

ANSWER _____

- 2** The points are (0, 9), (2, 7), (4, 5), and (6, 3). Describe the relationship.

ANSWER _____

- 3** The points are (1, 8), (2, 4), (3, 8), and (4, 4). Is there a positive trend, negative trend, or no clear trend?

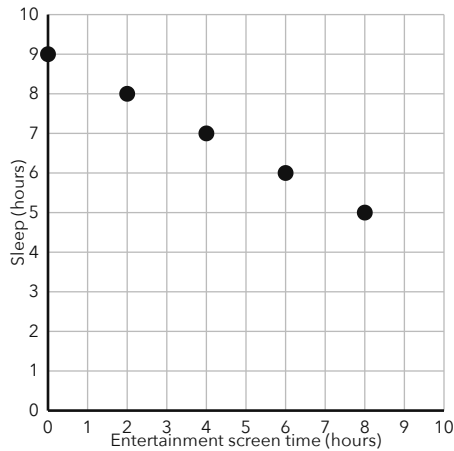
ANSWER _____

- 4** The points are (0, 2), (1, 4), (2, 6), (3, 1), and (4, 10). Identify the outlier and describe the trend of the other points.

ANSWER _____

APPLY IT Show your work

- 1** This scatter plot shows entertainment screen time, x , and sleep, y , in hours for several students. Describe the relationship. Predict y when $x = 10$.



ANSWER _____

- 2** A student records video-editing hours, x , and finished clips, y : (1, 2), (2, 4), (3, 6), (4, 8). Describe the relationship and predict the number of clips after 5 hours.

WORK SPACE

ANSWER _____

CHALLENGE One step up

The data pairs are (2, 10), (3, 9), (4, 8), and (5, 7). The number line shows the observed x -values and a target x -value. Is predicting y when $x = 8$ interpolation or extrapolation? Explain, then give the prediction.



WORK SPACE AND ANSWER

PART 1 • PRACTICE

#	PROBLEM	ANSWER
1	The points are (2, 1), (3, 3), (4, 5), and (5, 7). Describe the relationship.	Positive linear relationship. y increases by 2 when x increases by 1.
2	The points are (0, 9), (2, 7), (4, 5), and (6, 3). Describe the relationship.	Negative linear relationship. y decreases by 1 when x increases by 1.
3	The points are (1, 8), (2, 4), (3, 8), and (4, 4). Is there a positive trend, negative trend, or no clear trend?	No clear positive or negative trend.
4	The points are (0, 2), (1, 4), (2, 6), (3, 1), and (4, 10). Identify the outlier and describe the trend of the other points.	Outlier: (3, 1). The other points have a positive linear trend.

PART 2 • APPLY IT

- Negative linear relationship. When $x = 10$, $y = 4$ hours.** The plotted points fall as x increases. The pattern decreases 1 hour of sleep for every 2 more hours of screen time.
- Positive linear relationship. After 5 hours, the student will finish 10 clips.** The number of clips increases by 2 for each additional editing hour. Continue the pattern to $x = 5$.

CHALLENGE

Extrapolation, because 8 is outside the observed x -values from 2 to 5. The pattern decreases by 1 each time x increases by 1, so $y = 4$ when $x = 8$.

Accept equivalent wording for positive, negative, or no clear trend. For predictions, accept a correct continuation of the stated linear pattern.