LESSON MAKER PRO

Spot the Trend

Use scatter plots to estimate rates and predict values.

GRADE 8 · PA.D.1.3

PA.D.1.3 "Collect, display, and interpret data using scatter plots. Use the shape of the scatter plot to find the informal line of best fit, make statements about the average rate of change..."

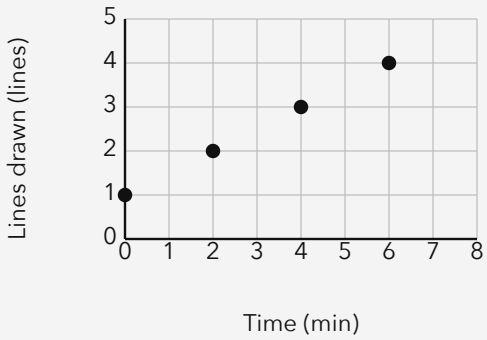
NAME _____ DATE _____

FOLLOW THE PATTERN

A line of best fit follows the middle of a scatter plot's pattern. Find its average rate of change by dividing the change in y by the change in x. Use that rate to predict a value.

WORKED EXAMPLE

Sketch Time: Use the plot to predict lines drawn after 8 min. Give the average rate.



1. A line through (0, 1) and (6, 4) follows the points.
2. Rate = (4 - 1)/(6 - 0) = 1/2 line per min.
3. From 6 to 8 min is 2 min, so add 1 line to 4.

Answer: 5 lines; 1/2 line per min

PRACTICE 4 problems

1 Points (1, 9), (3, 13), and (5, 17) follow a trend. Predict y at x = 7.

ANSWER _____

2 Find the average rate of change for points (2, 18), (4, 14), and (6, 10).

ANSWER _____

3 Points (10, 15) and (14, 27) lie on a trend line. Predict y at x = 16.

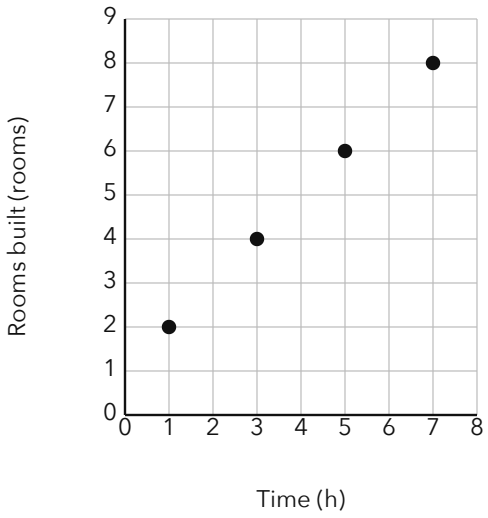
ANSWER _____

4 A trend line passes through (2, 21) and (6, 13). Predict y at x = 8.

ANSWER _____

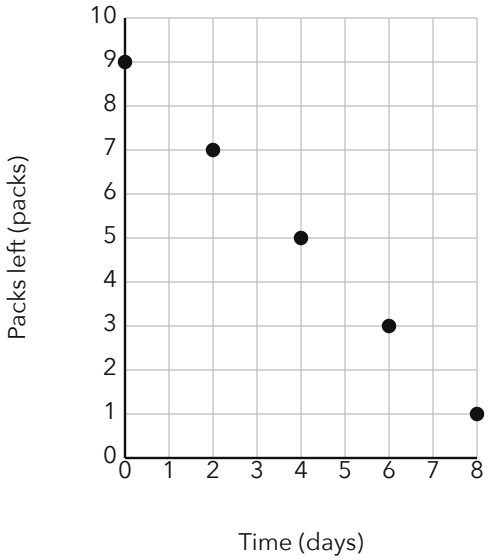
APPLY IT Show your work

1 Game Level Progress: Use the plot to predict rooms built after 6 h. Give the average rate.



ANSWER _____

2 Sticker Swap: Use the plot to predict packs left on day 5. Give the average rate.



ANSWER _____

CHALLENGE One step up

Points (2, 4), (4, 7), (6, 7), and (8, 10) form a scatter plot. A line of best fit passes through (2, 4) and (8, 10). Predict y at x = 10. Why needn't the line pass through every point?

WORK SPACE AND ANSWER

ANSWER KEY

Spot the Trend

GRADE 8 · PA.D.1.3

PART 1 · PRACTICE

#	PROBLEM	ANSWER
1	Points (1, 9), (3, 13), and (5, 17) follow a trend. Predict y at x = 7.	**21**
2	Find the average rate of change for points (2, 18), (4, 14), and (6, 10).	**-2**
3	Points (10, 15) and (14, 27) lie on a trend line. Predict y at x = 16.	**33**
4	A trend line passes through (2, 21) and (6, 13). Predict y at x = 8.	**9**

PART 2 · APPLY IT

1. **7 rooms; 1 room per h** The points rise by 2 rooms in 2 h, or 1 room per h. At 6 h, the trend reaches 7 rooms.
2. **4 packs; -1 pack per day** The number of packs drops by 2 every 2 days, or 1 pack per day. One day after day 4, 4 packs remain.

CHALLENGE

12. The line follows the overall trend, so some points can fall above or below it.

Accept equivalent rate units, such as rooms/hour. In the challenge, accept any explanation that a best-fit line represents the overall pattern rather than every point.