LESSON MAKER PRO

Model Meaning Match

Read rate and starting value in context.

GRADE 8 · 8.FGR.6.3

8.FGR.6.3 "Explain the meaning of the predicted slope (rate of change) and the predicted intercept (constant term) of a linear model in the context of the data."

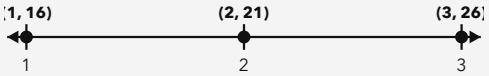
NAME _____ DATE _____

READ THE MODEL

A linear model can be written as output = rate × x + start. The rate tells how much the output changes for each 1 increase in x. The start tells the predicted output when x is 0.

WORKED EXAMPLE

The number line shows data pairs (weeks, dollars saved) for a linear model. Explain the predicted rate and start.

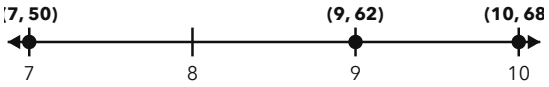


1. From (1, 16) to (2, 21), dollars rise 5 in 1 week.
2. The rate is $5 per week.
3. 16 = 5(1) + start, so the start is $11.

Answer: The model predicts savings of $5 each week and $11 saved at week 0.

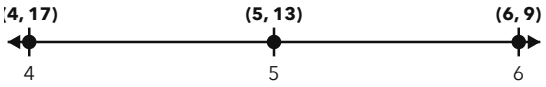
PRACTICE 4 problems

1 The number line shows data pairs (games, points) for a linear model. Explain the predicted slope and intercept.



ANSWER _____

2 The number line shows data pairs (days, tasks left) for a linear model. Explain the predicted slope and intercept.



ANSWER _____

3 A fundraiser model is total dollars = 7x + 13, where x is hours. Explain the predicted slope and intercept.

ANSWER _____

4 A model for ice left in a cooler is amount = -9x + 24, where x is minutes. Explain the predicted slope and intercept.

ANSWER _____

APPLY IT Show your work

1 A music app models downloads as downloads = 15x + 40, where x is days since a song was posted. What do the slope and intercept predict?

WORK SPACE

ANSWER _____

2 At esports club, a water cooler is modeled by water = -4x + 8, where x is hours and water is cups left. Use the graph to explain the slope and intercept.



ANSWER _____

CHALLENGE One step up

Two teams collect tokens after x rounds. Team A: tokens = 8x + 14. Team B: tokens = 6x + 20. Which team starts with more tokens? Which team gains tokens faster? Which team has more after 4 rounds? Explain.

WORK SPACE AND ANSWER

ANSWER KEY

Model Meaning Match

GRADE 8 · 8.FGR.6.3

PART 1 · PRACTICE

#	PROBLEM	ANSWER
1	The number line shows data pairs (games, points) for a linear model. Explain the predicted slope and intercept.	**Slope: 6 points per game. Intercept: 8 points at 0 games.**
2	The number line shows data pairs (days, tasks left) for a linear model. Explain the predicted slope and intercept.	**Slope: tasks decrease by 4 per day. Intercept: 33 tasks at day 0.**
3	A fundraiser model is total dollars = 7x + 13, where x is hours. Explain the predicted slope and intercept.	**Slope: $7 per hour. Intercept: $13 at 0 hours.**
4	A model for ice left in a cooler is amount = -9x + 24, where x is minutes. Explain the predicted slope and intercept.	**Slope: ice decreases by 9 units per minute. Intercept: 24 units at 0 minutes.**

PART 2 · APPLY IT

1. **The slope predicts 15 downloads per day. The intercept predicts 40 downloads on day 0.** Read 15 as the change for each day. Read 40 as the predicted starting number of downloads.
2. **The slope predicts 4 fewer cups each hour. The intercept predicts 8 cups at 0 hours.** The line falls 4 cups for each 1-hour move right. It crosses the vertical axis at 8 cups.

CHALLENGE

Team B starts with more, 20 tokens compared with 14. Team A gains tokens faster, 8 per round compared with 6. After 4 rounds, Team A has 46 tokens and Team B has 44, so Team A has more.

Accept equivalent wording such as starting amount, initial value, increases, or decreases. Students should connect the slope to change per 1 unit of x and the intercept to the predicted value at x = 0.