



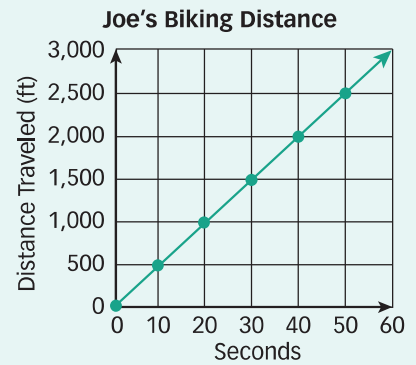
The student used the graph to determine Joe's rate. The rates can be used to find the total distance for any time.



Study the model below. Then solve problems 13–15.

Student Model

Justin and Joe are biking downhill. Justin starts 500 feet ahead of Joe and travels at a rate of 44 feet per second. Joe's rate is shown in the graph. After 1 minute, who will be farther down the hill?



Look at how you could show your work.

Possible answer: The graph shows Joe's rate: 50 ft/1 s and

the distance for 60s (1 min) is 3,000 ft. Justin's distance in

1 min = 44 ft/s × 60 s, or 2,640 ft. Add Justin's head start:

$$2,640 + 500 = 3,140 \text{ ft}$$

Solution: Justin will be 140 feet ahead of Joe after 1 minute of biking.

Pair/Share

Can you solve this problem in a different way?

What do the parts of the equation represent?



- 13 The equation and table show what two boys pay for gym fees. Compare the rate of change and initial value for each function.

Alfredo

Month	0	1	2	3
Cost (\$)	20	30	40	50

Alex

$c = 25 + 10m$, where c = cost in dollars and m = number of months.

Show your work.

Solution: _____

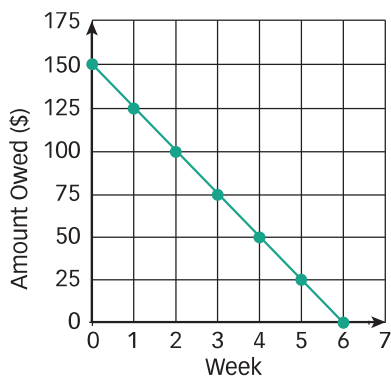
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How much more will Alex's cost be each month? Why?



- 14 Roy wants to buy a new wireless phone for \$200. Two stores offer different payment options. Which plan has a greater initial value? Which phone will be paid for at a faster rate?

Store A Payment Plan



Store B Payment Plan

Pay \$50 at the time of purchase. Pay \$20 per week until the phone is paid for.

Show your work.

Solution: _____

- 15 Which statement about these equations is true?

Equation A: $y = 3x + 4$

Equation B: $y = 5x + 2$

- A Equation A has a greater rate of change.
- B Equation A has a greater initial value.
- C Equation B has a greater initial value.
- D Both equations have the same initial value.

Ben chose C as the correct answer. How did he get that answer?

How does the graph show the initial value?



Pair/Share

Which option will take longer to pay? How much longer?

How does an equation show the initial value?



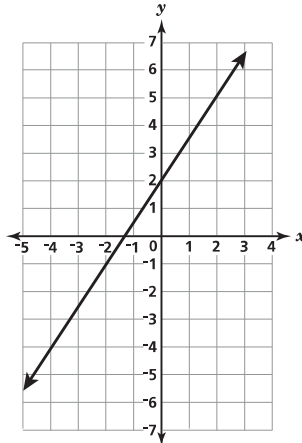
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How would the graphs of the equations compare?



Solve the problems.

- 1** The graph shows a function.



Which equation represents a function with a rate of change that is less than the rate of change of the function shown in the graph? Select all that apply.

- A** $y = 2x - 4$
- B** $y = \frac{5}{3}x + 1$
- C** $y = \frac{3}{2}x - 1$
- D** $y = x + 3$
- E** $y = \frac{x}{2} + 5$

- 2** For each verbal description, write in the correct equation from the choices provided.

Samantha begins her road trip with 30 gallons of gasoline in the tank of her van. Her van gets 25 miles to the gallon. Let y represent the number of gallons of gasoline in the tank after x miles of travel.

$$y = 30 + 0.25x$$

$$y = 30 - \frac{x}{25}$$

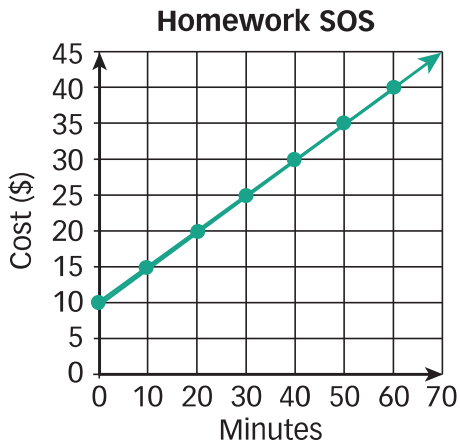
$$y = 25 - \frac{x}{30}$$

Evan has a cell phone plan that costs \$30 per month and \$0.25 per minute of phone use. Let y represent the monthly cost of cell phone service after x minutes of phone use.

$$y = 25 + 0.30x$$



3 The rates for two homework help services are shown below.



Homework Lifeline
Rates for Our Services

- Pay \$25 to set up an account with our service.
- Then pay \$0.40 for each minute of homework assistance that you receive.

Part A

Which service has the greater rate of change? Which has a greater initial value? Describe what this means in the context of the problem.

Show your work.

Answer _____

Part B

What would be the total cost for setting up an account and receiving 90 minutes of homework assistance at each company?

Show your work.

Answer _____

Self Check Go back and see what you can check off on the Self Check on page 51.