

Domain #1: Functions

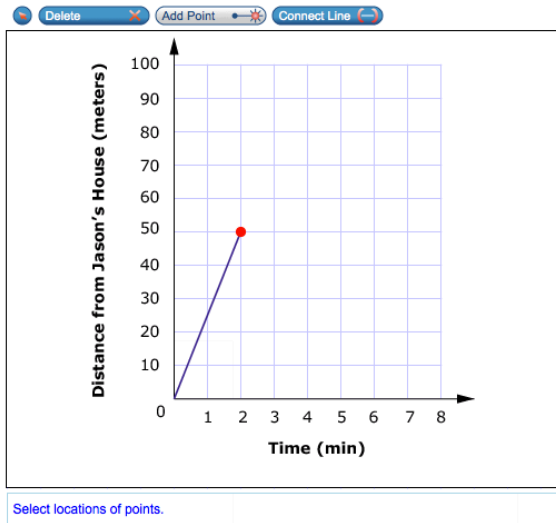
(Relevant Units: Unit 1 – Functions, Unit 3 – Linear Functions)

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The school is 100 meters from Jason's house. The following describes his most recent trip:

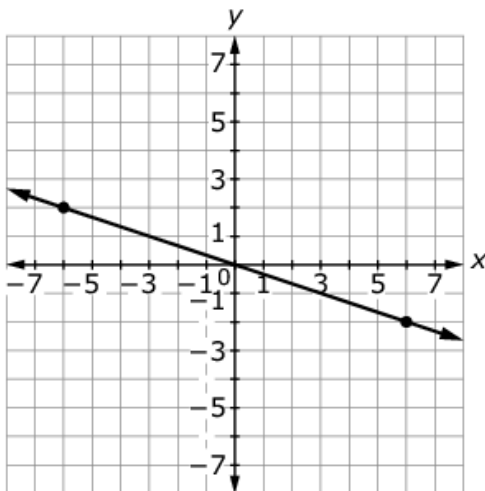
- He walked 50 meters toward school in 2 minutes. He realized that he left a book at home.
- He turned around and walked home at the same speed.
- He spent 1 minute looking for his book.
- He walked all the way to school at twice his original speed.

Use the Connect Line tool to finish a graph that accurately represents Jason's trip.



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Consider this graph of a line.

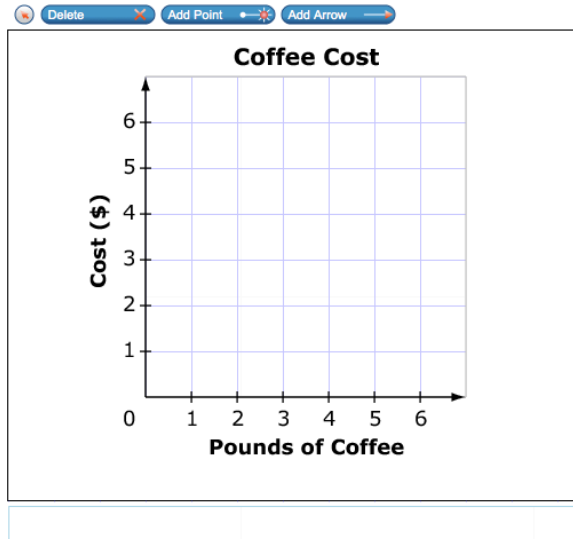


Enter an equation for the line.

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Coffee costs \$2.00 per pound at a coffee shop.

Use the Add Arrow tool to draw a ray that shows the proportional relationship between the number of pounds of coffee purchased and the total cost.



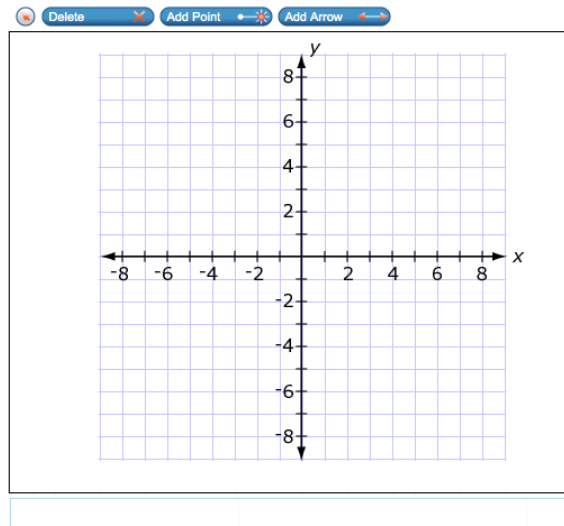
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John and Kim wrote down two different functions that have the same rate of change.

John's function is represented by the table shown.

x	y
-1	-5
1	-1
3	3

Use the Add Arrow tool to graph a function that could be Kim's function.



The table shows the relationship between the average number of hours students study for a mathematics test and their average grade.

Hours Studying	Average Grade
0	62
1	78
2	85
5	74

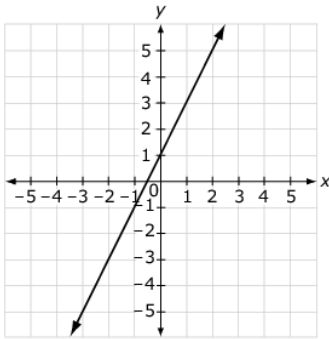
Which type of function is most likely to model these data?

- Ⓐ linear function with positive slope
- Ⓑ linear function with negative slope
- Ⓒ non-linear function that decreases then increases
- Ⓓ non-linear function that increases then decreases

This table shows the linear relationship of the water level in a tank and time.

Time (hr)	Water Level (ft)
0	50
2	40
4	30
6	20

Enter the rate of change of the water level, in feet per hour.



Which equation has a rate of change **greater than** the rate of change for the line shown?

- (A) $y = 3x - 1$
- (B) $y = \frac{x}{2} + 4$
- (C) $y = 2x + 2$
- (D) $y = \frac{x}{3} - 3$



Select the statement that correctly reflects what is shown in the graph.

- (A) The slope of the line is $\frac{6}{1}$, so Jack's savings rate is \$6 every week.
- (B) The slope of the line is $\frac{6}{1}$, so Jack's savings rate is \$1 every 6 weeks.
- (C) The slope of the line is $\frac{1}{6}$, so Jack's savings rate is \$6 every week.
- (D) The slope of the line is $\frac{1}{6}$, so Jack's savings rate is \$1 every 6 weeks.