

8th Grade TEKS Readiness Focus

TEKS 8.5I *write an equation in the form $y = mx + b$ to model a linear relationship between two quantities using verbal, numerical, tabular, and graphical representations.*

Activity Directions:

Items Needed: *Algebra Representations* activity, scissors, glue

1. Copy the activity for each student or student pair. Allow students to use graphing technology for the activity.
2. Students cut apart cards and find three that correlate to the verbal descriptions provided. (See below.)
3. Students may attach the cards or use multiple times to review.
4. Have students practice questions coded to TEKS 8.5I.

Name _____ Algebra Representations

Find 3 cards that match each verbal description. Attach to the template.

Verbal description	Equation	Table	Graph												
Sam, Frank, George and Tim went to a basketball game together. They paid a \$5.00 parking fee, and tickets cost \$2.50 per person. <ul style="list-style-type: none"> • x represents number of tickets • y represents total cost 	$y = 2.5x + 5$	<table border="1"> <thead> <tr> <th>x</th> <th>y</th> </tr> </thead> <tbody> <tr><td>1</td><td>7.5</td></tr> <tr><td>2</td><td>10</td></tr> <tr><td>3</td><td>12.5</td></tr> <tr><td>4</td><td>15</td></tr> <tr><td>5</td><td>17.5</td></tr> </tbody> </table>	x	y	1	7.5	2	10	3	12.5	4	15	5	17.5	
x	y														
1	7.5														
2	10														
3	12.5														
4	15														
5	17.5														
Jen and Joy are attempting to find the relationship between the side length and the perimeter of a regular hexagon. <ul style="list-style-type: none"> • x represents side length • y represents perimeter 	$y = 6x$	<table border="1"> <thead> <tr> <th>x</th> <th>y</th> </tr> </thead> <tbody> <tr><td>2</td><td>12</td></tr> <tr><td>4</td><td>24</td></tr> <tr><td>6</td><td>36</td></tr> <tr><td>8</td><td>48</td></tr> <tr><td>10</td><td>60</td></tr> </tbody> </table>	x	y	2	12	4	24	6	36	8	48	10	60	
x	y														
2	12														
4	24														
6	36														
8	48														
10	60														
The Snack Shack charges \$0.50 per food item and \$0.75 for a drink. <ul style="list-style-type: none"> • x represents number of food items • y represents total cost 	$y = 0.5x + 0.75$	<table border="1"> <thead> <tr> <th>x</th> <th>y</th> </tr> </thead> <tbody> <tr><td>1</td><td>1.25</td></tr> <tr><td>2</td><td>1.75</td></tr> <tr><td>3</td><td>2.25</td></tr> <tr><td>4</td><td>2.75</td></tr> <tr><td>5</td><td>3.25</td></tr> </tbody> </table>	x	y	1	1.25	2	1.75	3	2.25	4	2.75	5	3.25	
x	y														
1	1.25														
2	1.75														
3	2.25														
4	2.75														
5	3.25														
Medium-sized pizzas are cut into 8 slices before they are served at the pizza restaurant. <ul style="list-style-type: none"> • x represents the number of medium pizzas • y represents total slices of pizza 	$y = 8x$	<table border="1"> <thead> <tr> <th>x</th> <th>y</th> </tr> </thead> <tbody> <tr><td>0</td><td>0</td></tr> <tr><td>1</td><td>8</td></tr> <tr><td>2</td><td>16</td></tr> <tr><td>3</td><td>24</td></tr> <tr><td>4</td><td>32</td></tr> </tbody> </table>	x	y	0	0	1	8	2	16	3	24	4	32	
x	y														
0	0														
1	8														
2	16														
3	24														
4	32														
A theme park is sponsoring a fundraiser. A donation of \$5 will allow any person or group to enter the park for a day of activities. All money will go to charity. <ul style="list-style-type: none"> • x represents the number of people per group • y represents the entrance fee 	$y = 5$	<table border="1"> <thead> <tr> <th>x</th> <th>y</th> </tr> </thead> <tbody> <tr><td>2</td><td>5</td></tr> <tr><td>6</td><td>5</td></tr> <tr><td>10</td><td>5</td></tr> <tr><td>14</td><td>5</td></tr> <tr><td>18</td><td>5</td></tr> </tbody> </table>	x	y	2	5	6	5	10	5	14	5	18	5	
x	y														
2	5														
6	5														
10	5														
14	5														
18	5														
A submarine began the day 25 feet below sea level. It descended at a rate of 12 feet per minute. <ul style="list-style-type: none"> • x represents total minutes • y represents total depth 	$y = -12x - 25$	<table border="1"> <thead> <tr> <th>x</th> <th>y</th> </tr> </thead> <tbody> <tr><td>0</td><td>-25</td></tr> <tr><td>0.5</td><td>-31</td></tr> <tr><td>1</td><td>-37</td></tr> <tr><td>1.5</td><td>-43</td></tr> <tr><td>5.5</td><td>-91</td></tr> </tbody> </table>	x	y	0	-25	0.5	-31	1	-37	1.5	-43	5.5	-91	
x	y														
0	-25														
0.5	-31														
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Name _____

Date _____

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TEKS 8.5I Mini-Assessment

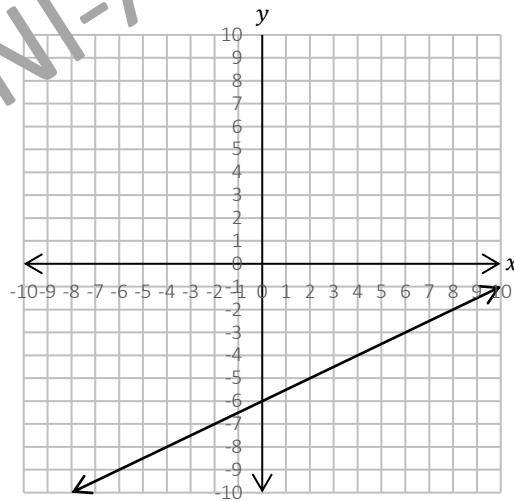
1. Maria keeps pictures of her baby in photo albums. She has one album of 72 pictures. She plans to put more photos in a second album that holds exactly 8 pictures per page, p . Which function can be used to find t , the total number of pictures in Maria's collection?

- (A) $t = 72p + 8$
- (B) $t = 72 - 8p$
- (C) $t = 8p + 72$
- (D) $t = (72 + 8)p$

2. A hot tub holding 300 gallons of water began to leak. The amount of water in the hot tub decreased at a constant rate of 12 gallons per hour. Which function can be used to find g , the total gallons of water after h hours?

- (A) $g = -12h + 300$
- (B) $g = 12h - 300$
- (C) $g = 300h - 12$
- (D) $g = -300h + 12$

3. Which function is best represented by this graph?



- (A) $y = 2x - 6$
- (B) $y = \frac{1}{2}x - 6$
- (C) $y = 2x - 10$
- (D) $y = \frac{1}{2}x - 10$

4. Ticket sales for a basketball playoff game started at 3:00 P.M. The table shows the linear relationship between the number of tickets remaining and the number of hours since 3:00 P.M.

Hours Since 3:00 P.M.	Number of Tickets Remaining
1	8,000
2	6,000
3	4,000
4	2,000
5	0

Which function can be used to find y , the number of tickets remaining x hours since 3:00 P.M.?

- (A) $y = -2,000x + 8,000$
- (B) $y = -2,000x + 10,000$
- (C) $y = 2,000x + 8,000$
- (D) $y = 2,000x + 10,000$

5. Frank drives a delivery truck. Each month he is paid the same salary. He is also paid extra money for the number of miles he drives delivering packages each month.

- In December Frank drove 1,200 miles and was paid a total of \$5,045.00.
- In January Frank drove 860 miles and was paid a total of \$4,841.00.

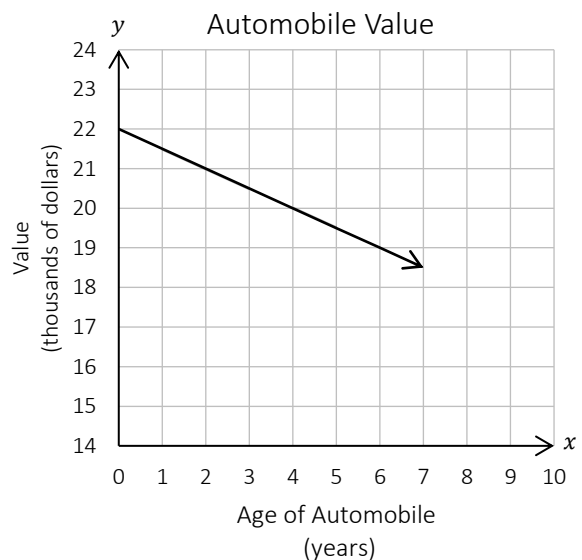
Which function can be used to find y , the total amount Frank is paid in a month if he drives x miles?

- (A) $y = 0.6x + 4,325$
- (B) $y = 4,325x + 0.6$
- (C) $y = 5.63x$
- (D) $y = 4.20x$

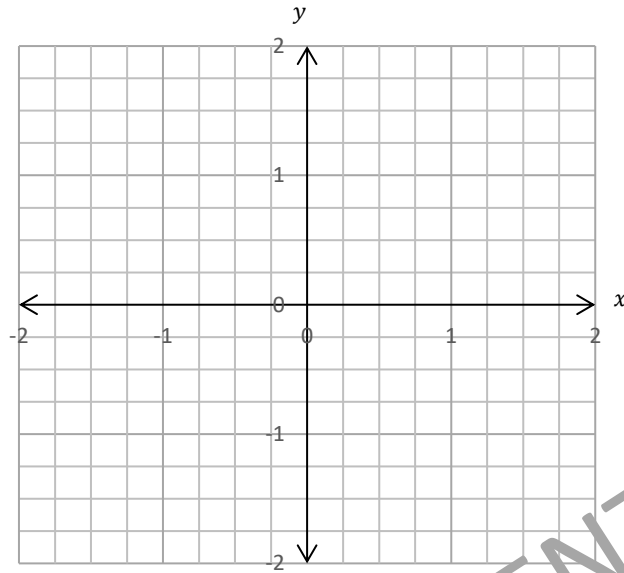
6. The graph shows the relationship between the value of an automobile and the age of an automobile.

Which function best represents the relationship shown in this graph?

- (A) $y = 22,000x - 500$
- (B) $y = 500x + 22,000$
- (C) $y = -1,000x + 22,000$
- (D) $y = -500x + 22,000$



7. The graph of a linear function passes through the points $(-1\frac{1}{2}, -\frac{3}{4})$ and $(1\frac{1}{2}, -1\frac{1}{4})$.



Which equation best represents the function?

- Ⓐ $y = -\frac{2}{3}x - 1$
- Ⓑ $y = -\frac{1}{6}x - \frac{3}{4}$
- Ⓒ $y = -\frac{1}{6}x - 1$
- Ⓓ $y = \frac{1}{6}x + 1$

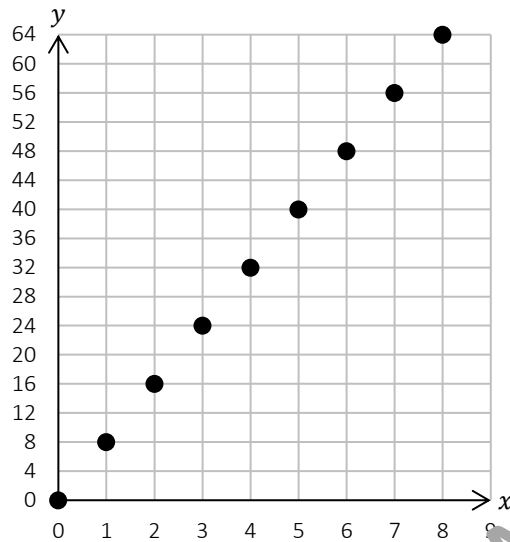
8. An orchard charges customers to pick fresh fruit.

- The orchard charges a one-time fee of \$15 to harvest fruit.
- The orchard also charges \$5 for every basket of harvested fruit.

Which function can be used to find t , the total amount a customer will pay to harvest b baskets of fruit?

- Ⓐ $t = 15b - 5$
- Ⓑ $t = 15b + 5$
- Ⓒ $t = -5b + 15$
- Ⓓ $t = 5b + 15$

9. The number of hot dog buns in different numbers of packages is modeled by the graph.



Which equation best represents the relationship between y , the number of hot dog buns, and x , the number of packages?

Ⓐ $y = x + 8$

Ⓒ $y = \frac{1}{8}x$

Ⓑ $y = 8x$

Ⓓ $y = 8x + 8$

10. A food truck sells hamburgers for \$7.50 each and hot dogs for \$6.50 each. Write an equation that represents the total cost, c , of h hamburgers and 4 hot dogs.

Enter your answer in the space provided.