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.*

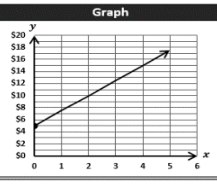
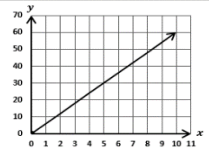
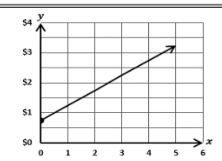
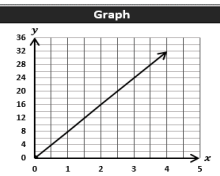
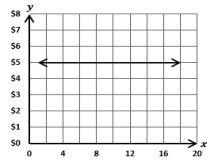
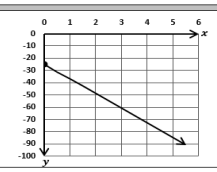
Activity Directions:

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 the 3 cards that match the verbal descriptions. Attach to the template.

Verbal description	Equation	Table	Graph
Sam, Frank, George and Paul went to a basketball game together. They paid a $5.00 parking fee, and each person paid $2.50 for a ticket. • x represents number of tickets • y represents total cost	$y = 2.5x + 5$	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. • x represents side length • y represents perimeter	$y = 6x$	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. • x represents number of food items • y represents total cost of a snack	$y = 0.5x + 0.75$	x | y 1 | 1.25 2 | 1.75 3 | 2.25 4 | 2.75 5 | 3.25	
Verbal description	**Equation**	**Table**	**Graph**
Medium pizzas are cut into 8 slices before they are served at the pizza restaurant. • x represents number of medium pizzas • y represents total slices of pizza	$y = 8x$	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. • x represents the number of people per group • y represents the entrance fee	$y = 5$	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. • x represents total minutes • y represents total depth	$y = -12x - 25$	x | y 0 | −25 0.5 | −31 1 | −37 1.5 | −43 5.5 | −91	

Name _____ Date _____

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.*

1. The numbers below form an arithmetic sequence.

$$-5, -7, -9, -11, -13, \ldots$$

Which equation can be used to find v, the value of the nth term in the sequence?

A. $v = -2n$

B. $v = -2n - 3$

C. $v = -2n + 3$

D. $v = 2n - 3$

2. 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 hold exactly 8 pictures per page, p. Which equation can be used to find t, the total number of pictures in Maria's collection?

F. $t = 72p + 8$

G. $t = 72 - 8p$

H. $t = 8p + 72$

J. $t = (72 + 8)p$

3. Which equation best describes a relationship between x and y in the table below?

x	y
0	4
5	$6\frac{1}{2}$
8	8
12	10
15	$11\frac{1}{2}$

A. $y = \frac{1}{2}x + 4$

B. $y = x + 4$

C. $y = 4x + \frac{1}{2}$

D. $y = \frac{1}{4}x + 4$

4. Philip is a painter. He paid $355 for items needed on the job. He plans to pay his friend $35 an hour to paint. The table below shows the relationship between h, the number of hours his friend will work, and c, the total cost of this project.

h	c
0	355
3	460
7	600
12	775

Which equation represents this relationship?

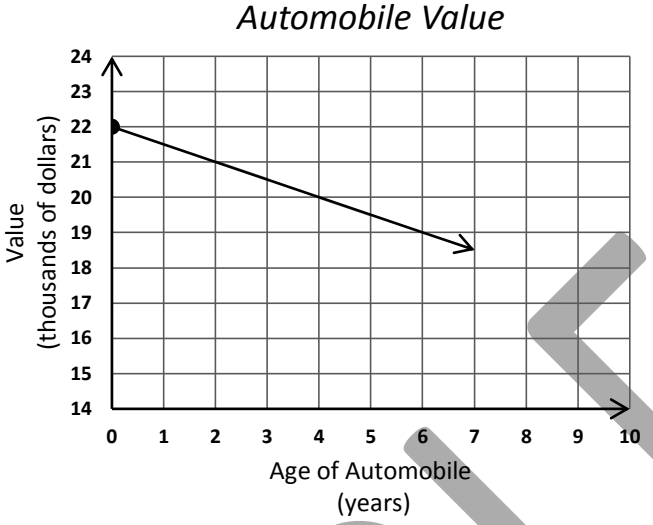
F. $c = 35h - 355$

G. $c = (355 + 35)h$

H. $c = 355 - 35h$

J. $c = 35h + 355$

5. The graph models the value of an automobile over a 7-year period.



Which equation best represents the relationship between x, the age of the automobile in years, and y, the value of the automobile in dollars over the 7-year period?

A. $y = -500x + 22{,}000$

B. $y = 500x + 22{,}000$

C. $y = -1{,}000x + 22{,}000$

D. $y = 22{,}000x - 500$

6. The numbers below form an arithmetic sequence.

$$1\frac{1}{3},\ 1\frac{2}{3},\ 2,\ 2\frac{1}{3},\ 2\frac{2}{3},\ \ldots$$

Which equation can be used to find v, the value of the nth term in the sequence?

F. $v = x + \frac{1}{3}$

G. $v = \frac{1}{3}x + 1$

H. $v = 2x - \frac{2}{3}$

J. $v = 1\frac{1}{3}x$

7. Shondra is walking 5,000 feet for a charity fund-raiser. She walks at a rate of 255 feet per minute, m. Which equation represents d, the remaining number of feet Shondra has to walk?

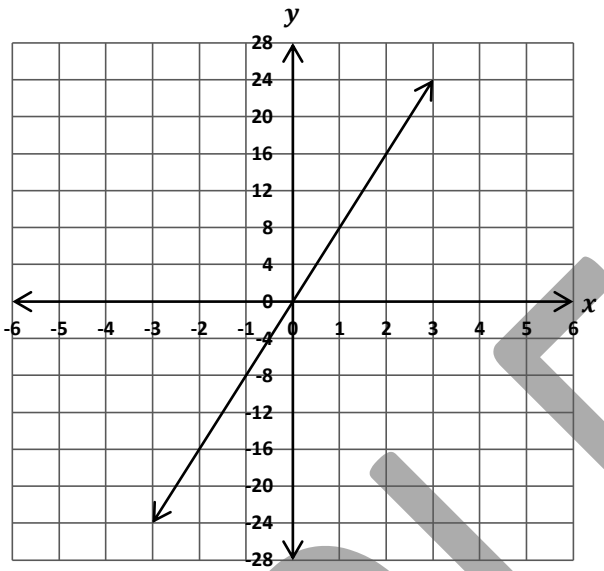
A. $d = 5{,}000m - 255$

B. $d = -5{,}000 + 255m$

C. $d = -255m + 5{,}000$

D. $d = 5{,}000 - 255$

8. The number of hot dog buns in different numbers of packages is modeled by the linear function shown below.



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

F. $y = x + 8$

G. $y = 8x$

H. $y = \frac{1}{8}x$

J. $y = 8x + 8$

9. Which equation best describes a relationship between x and y in the table below?

x	0.25	0.3	0.5	0.75	0.875
y	$\frac{1}{4}$	$\frac{3}{10}$	$\frac{1}{2}$	$\frac{3}{4}$	$\frac{7}{8}$

A. $y = \frac{1}{2}x$

B. $y = x + \frac{1}{2}$

C. $y = \frac{1}{2}x + \frac{1}{2}$

D. $y = x$

10. A taxi driver charges \$6.25 for the first 2 miles and \$1.45 for each additional mile driven when transporting passengers from the airport. Which equation can be used to find t, a passenger's total cost, when the taxi is driven m miles?

F. $t = 6.25 + 1.45(m - 2)$

G. $t = 6.25 + 1.45m - 2$

H. $t = 6.25m \bullet 1.45m - 2$

J. $t = 6.25 \bullet 1.45(m - 2)$