Name __Answer Key__   Period ____

Unit 2 Study Guide

SHOW ALL WORK TO JUSTIFY YOUR ANSWERS.

Tables, Graphs, & Equations

1. Southwest Middle is considering purchasing t-shirts for the entire eighth-grade class. The Eastside Pride found a company that charges $8 per shirt. The Westside Wildcats found a company that charges $125 fee plus $5 per shirt.

Eastside's Company		Westside's Company	
Number of Shirts	Cost	Number of Shirts	Cost
0	0	0	125
5	40	5	150
10	80	10	175
15	120	15	200
20	160	20	225
25	200	25	250
30	240	30	275
35	280	35	300
40	320	40	325
45	360	45	350
50	400	50	375

a. Write an equation that the cost of each t-shirt company.
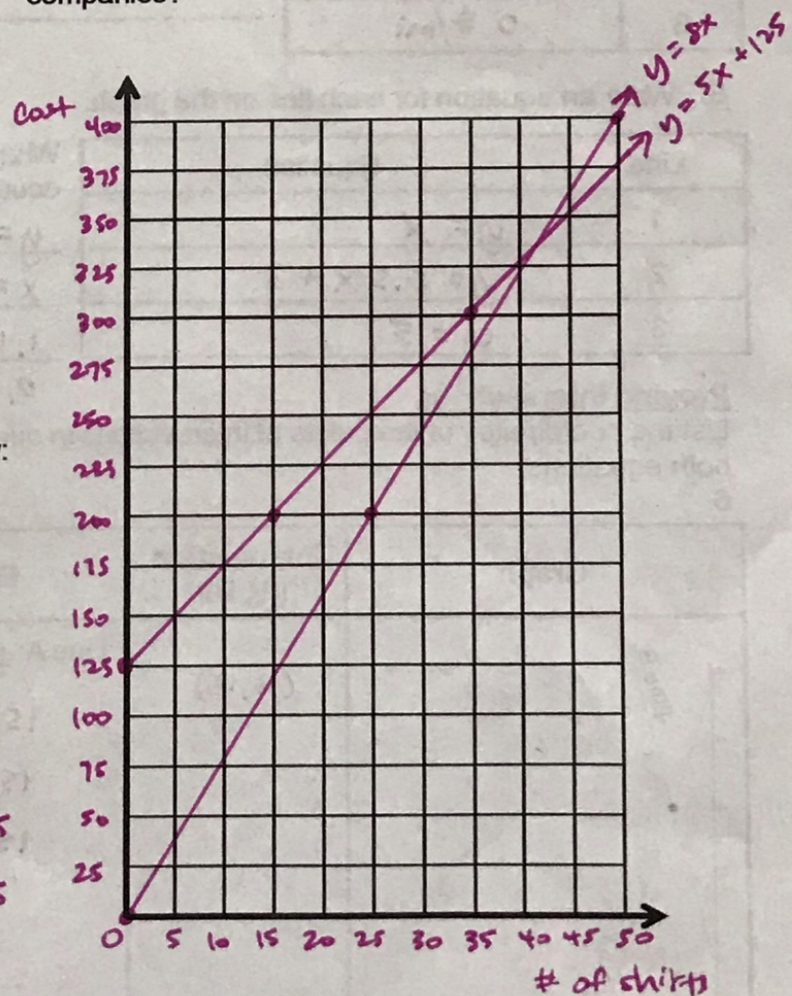
(IV = __# of shirts (x)__ DV = __cost (y)__)

Eastside's equation:

$$y = 8x$$

Westside's equation :

$$y = 5x + 125$$

a. Use tables and a graph to find the cost for a certain number of t-shirts. Complete the table for each company and then graph your results. At what number of shirts will the cost be the same for both companies?

c. If you have $200 to spend, how many shirts can you get from:

Eastside's Company: Westside's Company:

25   15

d. SWM decides to purchase 200 t-shirts. Which company should we choose? Show how you arrived at your answer.

Ⓔ $y = 8x$ Ⓦ $y = 5x + 125$

$y = 8(200)$ $y = 5(200) + 125$

$y = 1600$ $y = 1000 + 125$

                     $y = 1125$

Cost

$y = 8x$
$y = 5x + 125$

# of shirts

The price will be the same for ____ t-shirts.

Interpreting Graphs
Use the graph to answer questions 2-5.

2. List the independent variable (IV) and the dependent variable (DV) for each line on the graph.

IV	DV
# of miles	donation ($)

3. List the starting values for each line on the graph.

Line	Starting Value
1	O
2	3
3	S

What does the starting value represent in the context of the graph?

the amt of $ each person started w/

Pledge Plans

Donation (Dollars) vs Number of Miles. Line 2, Line 3, Line 1 shown.

4. List the rate for each line on the graph.

Line	Rate
1	1 $/mi
2	0.50 $/mi
3	0 $/mi

What two variables make up the rate for this graph?

# of miles & dollars

5. Write an equation for each line on the graph.

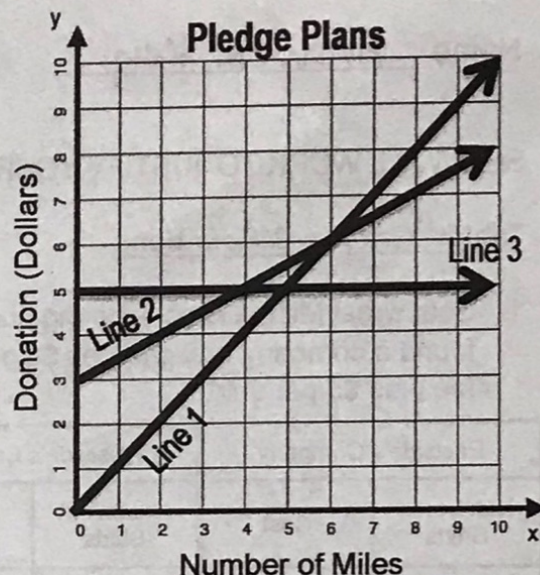| Line	Equation
1	$y = x$
2	$y = 0.5x + 3$
3	$y = 5$

What does each number and variable mean in the equations?

y = donations ($)

x = # of miles

1, 0.5, 0 → rate

0, 3, 5 → beginning amt

Proving Intersections
List the coordinates of the points of intersections in questions 6-7. Prove the intersection is a solution to both equations.

6.

| Graph	Intersection (IV, DV)	Evidence of a Solution Using the Equations	
	(3, 15)	Line A: $y = 24 - 3x$ $15 = 24 - 3(3)$ $15 = 24 - 9$ $15 = 15$ ✓	Line B: $y = 3 + 4x$ $15 = 3 + 4(3)$ $15 = 3 + 12$ $15 = 15$ ✓

Contextual Graphs

Graph each part of the trip on the graph to the right.

7. Tom and Brandon are brothers walking home from school. The following information describes their trip:

- Tom and Brandon are walking home from school. School is nine blocks away from home
- For the first three minutes, they start walking slowly and then speed up to get to the snow cone stand five blocks from school.
- They spend three minutes debating on which flavor to get.
- They walk home with their snow cones at a constant rate.

Journey Home from School
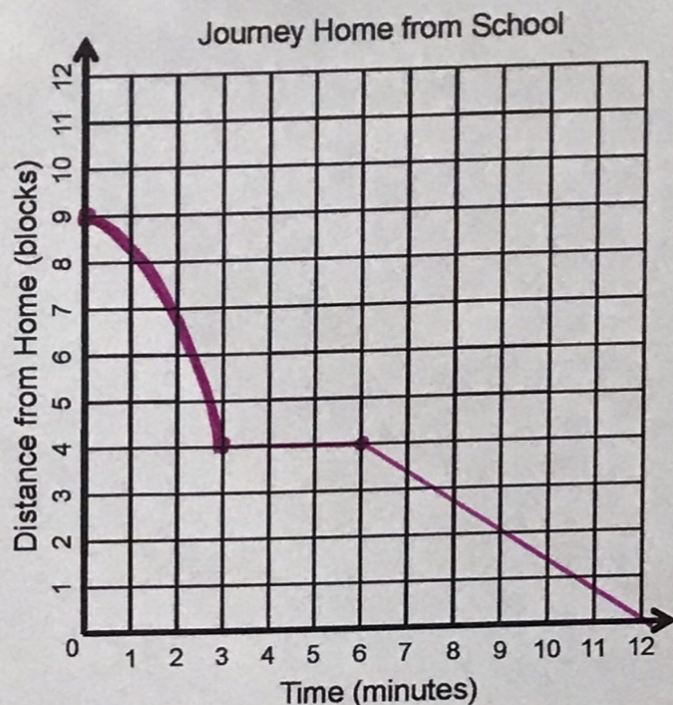
8. Match the context situation to the graph by writing the letter of the situation on the line to the right of the graph.

___C___   ___D___   ___A___   ___B___
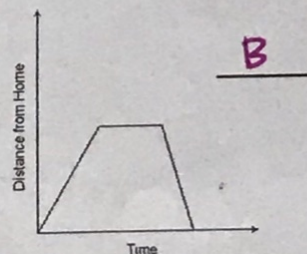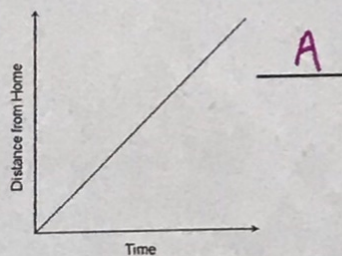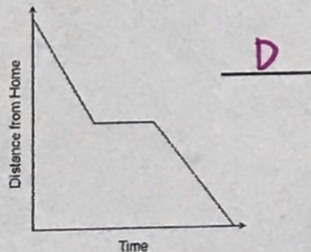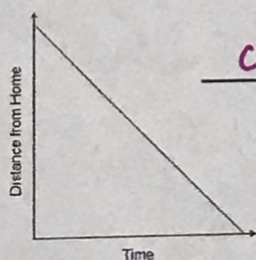
A. Sally walks to school at a constant rate.
B. Sally walks from home to her friend's house. She stops to drop off a book and then walks back home.
C. Sally walks home from school at a constant rate.
D. Sally walks to Sonic after school, stops to order a shake, and then walks home.

9. Write a context that could represent the graph on the right:

I walked from home to Sonic at a

constant rate. When I got to Sonic, I

ordered a milkshake and waited. Then

I walked at a constant rate back to

my friend's house.