

Assignment

Name _____ Date _____

Video Arcade

Writing and Graphing an Inequality in Two Variables

The senior class plans to raise money to help pay for a local playground. The class sets a goal to raise at least \$2000 by washing cars and selling T-shirts. Every car washed earns \$5 and every T-shirt sold earns \$8.

1. If the class washes 100 cars and sells 150 T-shirts, will the goal be reached?
Show your work.
2. If the class washes 150 cars and sells 200 T-shirts, will the goal be reached?
Show your work.
3. Write an expression that represents the total money raised. Let x represent the number of cars washed and let y represent the number of T-shirts sold.
4. Complete the table that shows the total money raised for different numbers of cars washed and T-shirts sold.

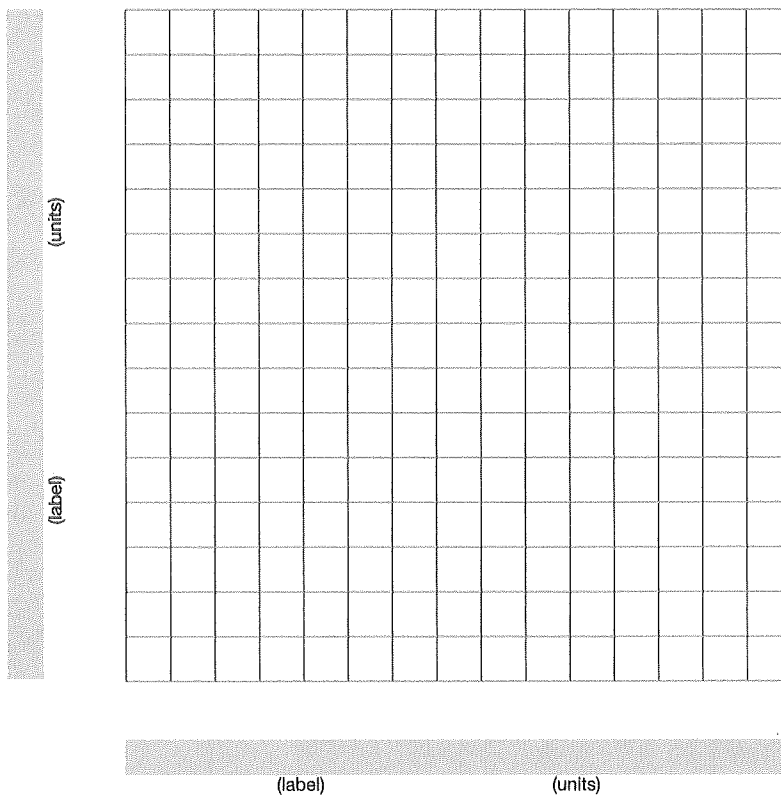
Quantity Name	Cars washed	T-shirts sold	Money raised
Unit	cars	T-shirts	dollars
	0	250	
	25	175	
	50	150	
	200	200	
	125	200	
	200	125	

5. Which ordered pairs from the table in Question 4 satisfy the problem situation?
6. Write an equation that represents the number of cars washed x and the number of T-shirts sold y that raises exactly \$2000.

7. Find the x - and y -intercepts of your equation in Question 6.

8. Use the intercepts to graph the equation in Question 6 on the grid below. Use the bounds and intervals given below. Be sure to label your graph clearly.

Variable quantity	Lower bound	Upper bound	Interval
Number of cars washed			
Number of shirts sold			



9. Write a linear inequality that represents the number of cars washed x and the number of T-shirts sold y that raises at least \$2000.
10. Plot the ordered pairs from Question 5 on the grid above.
11. Shade the region on the graph above that shows all the points that satisfy the inequality in Question 9.