Assignment

Name _____ Date _____

Making and Selling Markers and T-Shirts
Using a Graph to Solve a Linear System

1. Define break-even point in your own words.

2. How can a graph be used to determine the break-even point? Use a complete sentence in your answer.

A company makes and sells flags with various seasonal themes. It costs $12 to manufacture each flag, and there is a set-up cost of $200 for a new design. The company sells the flags to home improvement stores for $20 per flag.

3. Write an equation for the production cost in dollars in terms of the number of flags produced. Be sure to describe what your variables represent. Use a complete sentence in your answer.

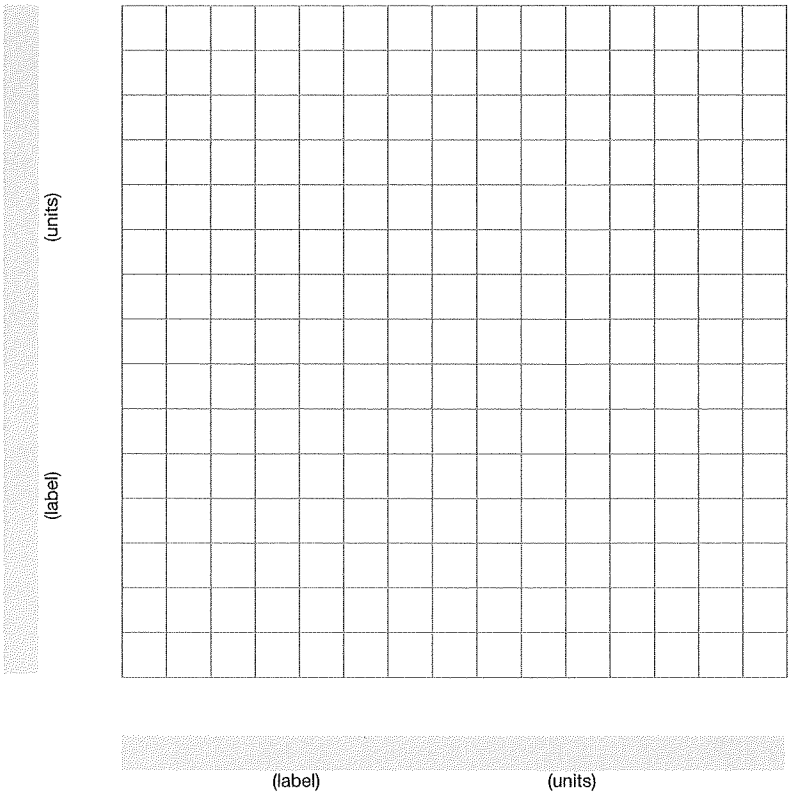
4. Write an equation for the income in dollars in terms of the number of flags sold. Be sure to describe what your variables represent. Use a complete sentence in your answer.

5. Complete the table of values that shows the production cost and income for different numbers of flags with the same design.

Quantity Name	Number of flags	Production cost	Income
Unit	flags	dollars	dollars
Expression	x		
	0		
	20		
	30		
	50		
	120		

6. Create a graph of both the production cost and income equations on the grid below. Use the bounds and intervals below. Be sure to label your graph clearly.

Variable quantity	Lower bound	Upper bound	Interval
Flags	0	150	10
Money	0	3000	200



7. What is the break-even point for making and selling flags? Use a complete sentence in your answer.

8. What is the company's profit at the break-even point? Show all your work and use a complete sentence in your answer.