

NAME \_\_\_\_\_

# What's Linear?

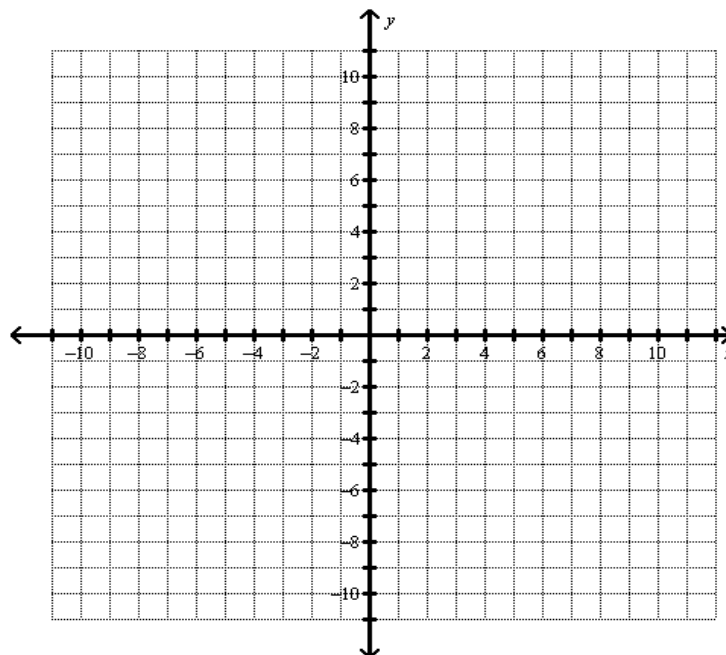
1. Draw a set of graphing axes below and label the x and y-axis.
2. What is the difference between an input (independent variable) and an output (dependent variable)?
3. Plot each of the following on the grid below. Be sure to label each point with the letter.

A(2, 5)

B(-3, 5)

C(-1, -3)

D(4, -2)



4. The soccer boosters make \$5 on each T-shirt they sell.

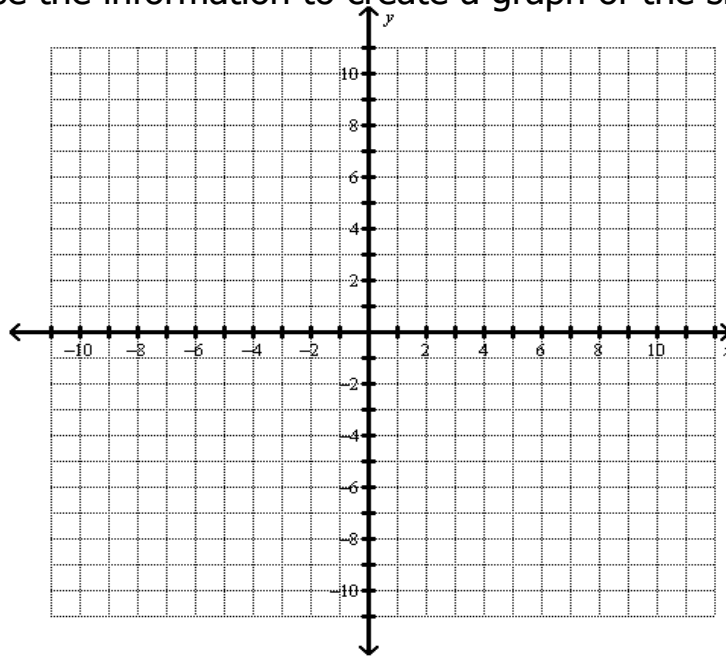
a. Determine the input and the output.

Input: \_\_\_\_\_ Output: \_\_\_\_\_

b. Use the information to fill in the table below...

Input:					
Output:					

c. Use the information to create a graph of the situation.



d. Is the situation linear? How can you tell by looking at the table?  
How can you tell by looking at the graph?

e. Explain what does the point (6, 30) mean in the context of the t-shirt sale?

5. Determine whether each situation is linear or not linear. If it is linear write an equation.
- a. A van averaged a steady 60 miles per hour on the interstate highway.
  - b. The fish population is currently 25. The population triples every year.
  - c. Josie has \$200 in the bank. She deposits \$40 each month.
  - d. Kayla is selling pizza kits for a fundraiser. Each pizza kit costs \$16.
  - e. Bryce is entering a walk-a-thon. He proposes a pledge plan where he asks for a \$6 donation plus \$1.50 for each mile he walks.
  - f. Lazer Lights, a lazer tag facility, charges \$10 a person, \$18 for a couple, \$25 for a group of three, and \$30 for a family of four or more.

6. Use the equations below to answer each of the following questions...

$$y = 3x + 6$$

$$y = 2x + 10$$

- a. If graphed, which equation would produce the steepest line? How can you tell?
  
  
  
  
  
  
  
  
  
  
- b. If graphed, which equation would produce a higher y-intercept? How can you tell?
  
  
  
  
  
  
  
  
  
  
- c. Write a situation that could be represented by each equation.

$$y = 3x + 6$$

$$y = 2x + 10$$

6. When looking at a table, how can you determine where the y-intercept is?

7. Lisa's proposes the following pledge plan. She asks for a \$3 donation and \$2 for every mile she walks. Write a linear equation to represent this situation.

Use this equation to answer each of the following questions...

a. How much money will Lisa raise if she walks 6 miles?

b. How much money will Lisa raise if she walks 4 miles?

c. How many miles will Lisa have to walk to earn \$13?

d. How many miles will Lisa have to walk to earn \$21?