

**Writing and Solving Systems of Equations***Independent Practice***Use the following scenario for questions 1 – 5.**

The members of a school dance club want to buy t-shirts that have the school logo on them. T-shirts for Teens charges \$15 for each shirt and a one-time set up and design fee of \$80. T-shirts R Us charges \$13 for each shirt and a one-time set up and design fee of \$120.

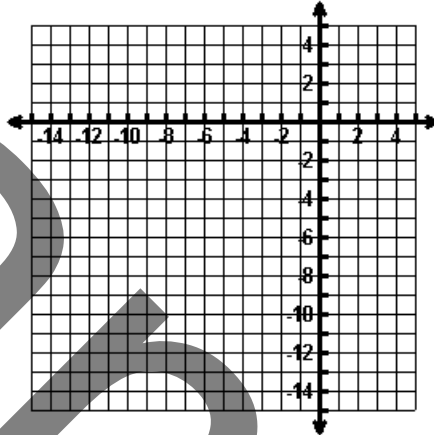
1. Write an equation that can be used to find  $y$ , the total cost of buying  $x$  shirts from T-shirts for Teens.
2. Write an equation that can be used to find  $y$ , the total cost of buying  $x$  shirts from T-shirts R Us.
3. How many shirts can the club buy where the cost will be the same from both companies? How much will the dance club spend?  
20 shirts
4. Which company offers the better price if the dance club wants to buy 10 shirts?
5. Which company will provide the greatest number of shirts if the dance club wants to spend \$620?

Use the following system of equations for questions 6 – 9.

$$y = x - 3$$

$$y = 2x + 6$$

6. Graph the system of linear equations on the coordinate grid below.



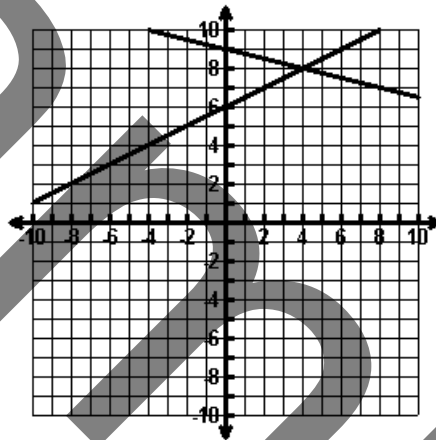
7. What is the solution to the system of equations?
8. Put  $y = x - 3$  in  $y_1$  and  $y = 2x + 6$  in  $y_2$  on your graphing calculator. Use the table feature to complete the table below.

| $x$ | $y_1$ | $y_2$ |
|-----|-------|-------|
| -12 | -15   | -18   |
| -9  |       |       |
| -5  |       |       |
| -1  |       |       |
| 0   |       |       |
| 3   |       |       |
| 6   |       |       |

9. Circle the solution to the given system in the table above.

| $x$ | $y_1$ | $y_2$ |
|-----|-------|-------|
| -12 | -15   | -18   |
| -9  |       |       |
| -5  |       |       |
| -1  |       |       |
| 0   |       |       |
| 3   |       |       |
| 6   |       |       |

Use the following graph for questions 10 – 12.



10. Write the system of equations shown in the graph in slope-intercept form.
11. Write the system of equations shown in the graph in standard form.
12. What is the solution to the system of equations shown in the graph?

**Use the following scenario for questions 13 – 15.**

Samuel has \$5.75 in quarters and dimes. He has 32 coins in all.

13. Write a system of equations to represent the situation, letting  $q$  represent the number of quarters Samuel has and  $d$  represent the number of dimes he has.

14. How many quarters does Samuel have?

15. How many dimes does Samuel have?