

Systems of Equations  
Relay Game

**SUBJECT:** Algebra

**OBJECTIVES:**

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|----------|--|
| M052C.01 | To solve systems of linear functions by graphing                         |
| M052C.02 | To solve systems of linear functions by the elimination method           |
| M066A.03 | To solve systems of linear equations in two variables by several methods |

**PREREQUISITES:**

- To compute slope when given two points
- To graph a line by slope y-intercept
- To find the equation of the perpendicular line to a given line

**MATERIALS NEEDED:**

- Graph paper for each student
- Five index cards for each team
- Straightedge for each student

**INSTRUCTIONS TO THE TEACHER FOR MAKING ACTIVITY:**

1. Write the instructions on each set of cards.
2. If you make up your own problems, use systems of equations whose solutions are integers.

**INSTRUCTIONS TO THE TEACHER FOR CONDUCTING ACTIVITY:**

1. Divide the class into teams with five students on each team.
2. Hand out the cards to each team.
3. The first person on each team is to begin working at the same time.

**DIRECTIONS TO THE STUDENT:**

1. The first team member completes the problem on the first card and passes the results to the second team member.
2. The second team member uses the results from the first team member to solve the second problem.
3. The process continues until the last problem is completed.
4. The first team to finish calls out the final solution.

**VARIATIONS:**

1. Have students write their own set of problems. These can be used in the class at a later date.
2. Have students switch positions in the team after each round.

*With six weeks. Lesson 5, page 1*

**Sets of Cards and Answers****Example #1****Set of Cards**

- 1st Card: Graph  $2x - 3y = 7$  on a sheet of graph paper. Pass the graph to the next person.
- 2nd Card: On this same coordinate system, graph  $4x + 3y = 5$ . Pass the graph to the next person.
- 3rd Card: Locate the point of intersection of the two linear graphs and write that point at the bottom of the graph paper. Pass the graph to the next person.
- 4th Card: Write an equation of a line through the point of intersection and perpendicular to the line  $x + 3y = 24$ . Pass this equation to the next person.
- 5th Card: Find the point of intersection of the line given to you and  $5x - y = 15$  algebraically.

**Answers**

(2,-1)

 $y = 3x - 7$ 

(4,5)

**Example #2****Set of Cards**

- 1st Card: Graph  $3x - y = 3$  on a sheet of graph paper. Pass the graph to the next person.
- 2nd Card: On this same coordinate system, graph  $2x - y = 1$ . Pass the graph to the next person.
- 3rd Card: Locate the point of the intersection of the two linear graphs and write that point at the bottom of the graph paper. Pass the graph to the next person.
- 4th Card: Write an equation of a line through the point of intersection and parallel to the line  $3y + 2x = -6$ . Pass this equation to the next person.
- 5th Card: Find the point of intersection of the line given to you and  $y = 3x + 8$  algebraically.

**Answers**

(2,3)

 $y = -\frac{2}{3}x + \frac{13}{3}$ 

(-1,5)

**Example #3****Set of Cards****Answers**

1st Card: Graph  $\frac{1}{2}x + y = 4$  on a sheet of graph paper.  
Pass the graph to the next person.

2nd Card: On this same coordinate system, graph  
 $x + \frac{1}{2}y = 5$ . Pass the graph to the next person.

3rd Card: Locate the point of intersection of the two linear  
graphs and write that point at the bottom of the  
graph paper.

(4,2)

4th Card: Write an equation of a line through the point of  
intersection and perpendicular to the line  
 $x = 3y + 12$ . Pass this equation to the next person.

$y = -3x + 14$

5th Card: Find the point of intersection of the line given to you  
and  $2x + 3y = 21$  algebraically.

(3,5)