

Name \_\_\_\_\_

Date \_\_\_\_\_ Pd. \_\_\_\_\_

**Notes: Graphing Systems of Equations Day 1****NOTES****Solving Systems of Equations Numerically**

Solving systems of linear equations using numeric, graphic, and algebraic representations deepens students' understanding of systems and their solutions. The table functions on a graphing calculator can be used to solve systems of linear equations numerically as shown in the example below.

Solve the system:

$$y = 2x + 5$$

$$y = 3x + 1.5$$

Enter the equations on the Y= screen of the calculator.

Using the table set and table functions, create a table of values so that the initial value of  $x$  is 0 and the  $x$ -values increase by 1.

X	Y <sub>1</sub>	Y <sub>2</sub>
0	5	1.5
1	7	4.5
2	9	7.5
3	11	10.5
4	13	13.5
5	15	16.5
6	17	19.5

$$X=0$$

To determine the solution to the system in the table, look for the value of  $x$  for which the value of  $Y_1$  equals the value of  $Y_2$ . If this value is not shown in the table, then the table set will need to be adjusted. In the above screen, when  $x$  is between 3 and 4,  $Y_2$  changes from a value less than  $Y_1$  to a value greater than  $Y_1$ . This means that the solution must be between \_\_\_\_\_ and \_\_\_\_\_.

Change the table set so that the initial value is 3 and the  $x$ -values increase by \_\_\_\_\_.

X	Y <sub>1</sub>	Y <sub>2</sub>
3	11	10.5
3.1	11.2	10.8
3.2	11.4	11.1
3.3	11.6	11.4
3.4	11.8	11.7
3.5	12	12
3.6	12.2	12.3

$$X=3$$

In this screen, when \_\_\_\_\_,  $Y_1 = Y_2 = 12$ . The pair of values  $x =$  \_\_\_\_\_ and  $y =$  \_\_\_\_\_ represent the solution to the system of equations.

This process may need to be repeated depending on the type of numbers and precision required for the solution.

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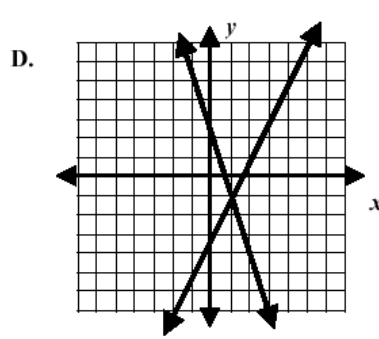
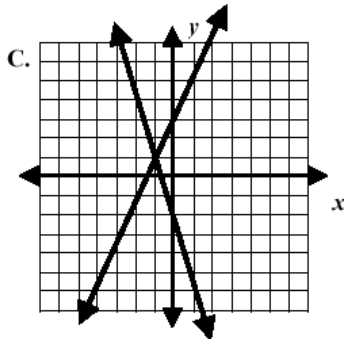
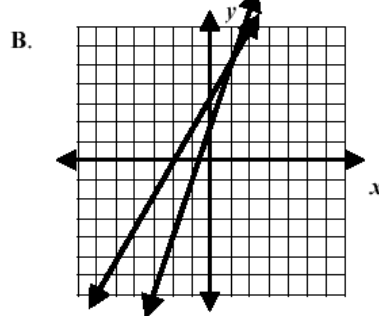
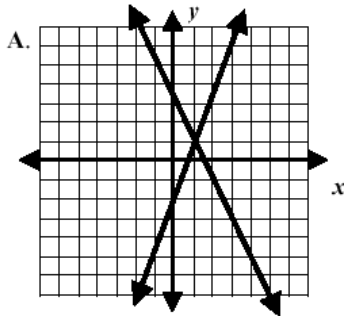
### Exit Card: Graphing Systems of Equations Day 1

Look at the system of equations below.

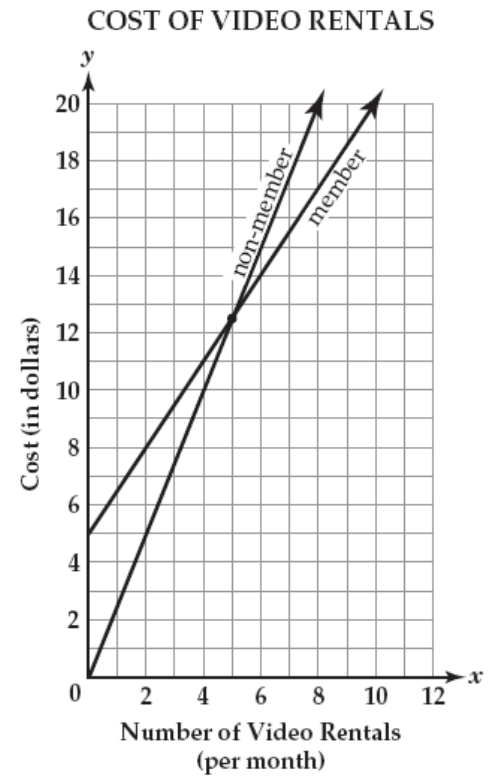
$$y = -2x + 3$$

$$y = 3x - 2$$

Which of these graphs represents this system of equations?



The graph below shows the cost of video rentals for members and non-members of a video club.



According to the graph, which of these statements is true?

- A members pay less for 4 movies
- B non-members pay less for 5 movies
- C non-members pay less for 6 movies
- D members pay less for 8 movies