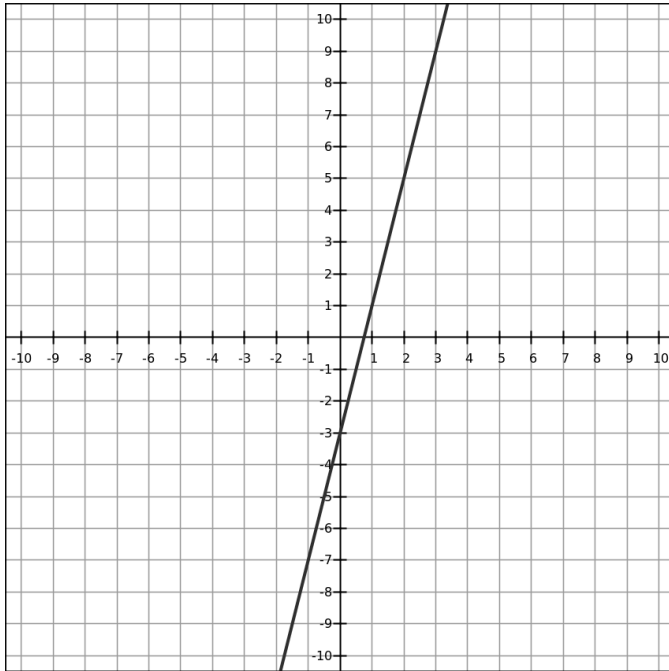


## Systems of Linear Equations: Retest Review

- I can graph a linear equation in slope intercept form.
- I can find the intersecting point of two lines and identify it as the solution of the system of equations.

(A.8B)

1. The graph of the equation  $y = 4x - 3$  is given below. Graph  $y = \frac{3}{2}x + 2$  on the grid.



What is the solution to this system of equations?

- A (2, 5)
- B (0, 2)
- C (5, 2)
- D (3, 9)

(A. 8B)

2. Some values for two linear equations are shown in the tables below.

$x$	$y_1$
-4	-3
-3	-1
-2	1
-1	3
0	5
1	7

$x$	$y$
-4	6
-3	5
-2	4
-1	3
0	2
1	1

What is the solution to the system of equations represented by these tables?

- A (0, 5)
- B (0, 2)
- C (-1, 3)
- D (-3, -1)

- I can solve a linear equation in standard form for  $y$  to put it in slope-intercept form.
- I can find the intersecting point of two lines and identify it as the solution of the system of equations.

(A. 8B)

3. What is the value of the  $x$  in the solution to the system of linear equations below?

$$\begin{aligned} y &= 8x - 8 \\ 3x + 2y &= -16 \end{aligned}$$

- A  $x = 0$
- B  $x = 2$
- C  $x = -5$
- D  $x = -8$

- I can solve a linear equation in standard form for  $y$  to put it in slope-intercept form.
- I can find the intersecting point of two lines and identify it as the solution of the system of equations.

(A. 8B)

4. Which is the solution to this pair of linear equations?

$$\begin{aligned} 3x + y &= 6 \\ -x + 2y &= 12 \end{aligned}$$

- A (0, 12)
- B (0, 6)
- C (0, -6)
- D (6, 0)

(A. 8B)

5. The equations of two lines are  $y = -x - 6$  and  $2x - 3y = -2$ . What is the value of the  $y$  in the solution for this system of linear equations?

- A  $y = 2$
- B  $y = -2$
- C  $y = -6$
- D  $y = -4$

- I can translate a word problem into two algebraic equations.

(A. 8A)

6. An ice skating arena charges an admission fee for each child plus a rental fee for each pair of ice skates. John paid the admission fees for his six nephews and rented five pairs of ice skates. He was charged \$32.00. Juanita paid the admission fees for her seven grandchildren and rented five pairs of ice skates. She was charged \$35.25. If  $a$  represents the amount of the admission fee and  $r$  represents the skate rental fee, which of the following systems of equations can be used to represent this situation.

- |   |                   |   |                   |   |                   |   |                   |
|---|-------------------|---|-------------------|---|-------------------|---|-------------------|
| A | $32.00a + 5r = 5$ | B | $5a + 6r = 32.00$ | C | $6a + 5r = 32.00$ | D | $8a + 5r = 32.00$ |
|   | $35.25a + 5r = 7$ |   | $5a + 7r = 35.00$ |   | $7a + 5r = 35.25$ |   | $7a + 7r = 35.00$ |

(A. 8A)

7. A jar containing only nickels and dimes contains a total of 60 coins. The value of all the coins in the jar is \$4.45. If  $n$  represents the number of nickels and  $d$  represents the number of dimes, which of the following systems of equations can be used to represent this situation.

- |   |                        |   |                      |   |                   |   |                        |
|---|------------------------|---|----------------------|---|-------------------|---|------------------------|
| A | $n + d = 60$           | B | $n + d = 4.45$       | C | $n + d = 60$      | D | $0.05n + 0.10d = 60$   |
|   | $0.05n + 0.10d = 4.45$ |   | $0.05n + 0.10d = 60$ |   | $5n + 10d = 4.45$ |   | $0.05n + 0.10d = 4.45$ |

- I can translate a word problem into two algebraic equations.
- I can solve a linear equation in standard form for  $y$  to put it in slope-intercept form.
- I can find the intersecting point of two lines and identify it as the solution of the system of equations.

(A. 8C)

8. A test has twenty questions worth 100 points. The test consists of True/False questions worth 3 points each and multiple choice questions worth 11 points each. This system of equations can be used to find how much of each question type he has.

$$\begin{aligned}x + y &= 20 \\ 3x + 11y &= 100\end{aligned}$$

Where  $x$  represents the number of true/false question and  $y$  represents the multiple choice questions. The solution to the system is  $(15, 5)$ . What is the correct interpretation of this solution.

- A There are 15 multiple choice questions and 5 true/false questions.
- B There are 15 true/false questions and 5 multiple choice questions.
- C There are 20 true/false questions and 100 multiple choice questions.
- D There are 15 true/false and 15 multiple choice questions.

(A. 8C)

9. Monica has 40 pieces of fruit. Each piece is either an apple or an orange. The number of apples total 2 more than three times the number of oranges. Monica wrote the following systems of equations where  $x$  is the number of apples and  $y$  is the number of oranges.

$$\begin{aligned}x + y &= 40 \\ x &= 2 + 3y\end{aligned}$$

What statement below describes the solution to the system of equations?

- A There is no reasonable solution to the system of equations because the number of fruit cannot be negative.
- B There is no reasonable solution to the system of equations because the number of fruit cannot be a fraction.
- C There is a reasonable solution to the system of equations.
- D This system has no solution.

## Linear Systems Notes

### Calculator Steps

Step 1: Get both equations in slope-intercept form

Step 2: Press the **y=** button on the calculator and type the equations on **y1=** and **y2=**

Step 3: Press **Graph** and pick a **Zoom** that displays the intersection of the system (if non-parallel)

Step 4: Click **2<sup>nd</sup>**, **Trace**, **5** "Intersect", **Enter**, **Enter**, **Enter**. The calculator will read "Intersection"

### Number of Solutions

One Solution – the lines intersect once at the point  $(x, y)$

No Solution – the lines are parallel and have the same slope

Infinitely Many Solutions – the lines have the same slope and y-intercept,

appears as one line on the calculator