

Unit 7 Practice Test

1) What are the possible solutions for a system of equations?

- a. One solution or no solution
- b. One solution, no solution, or infinitely many solutions
- c. Linear, collinear or nonlinear
- d. Graphing, substitution, or elimination

2) Explain why there is no solution to the system $\begin{cases} x + 2y = 5 \\ x + 2y = 8 \end{cases}$

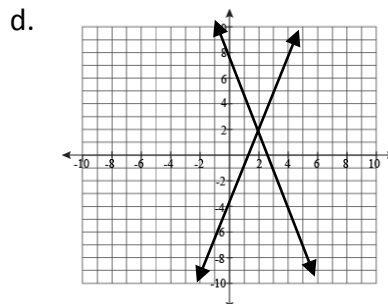
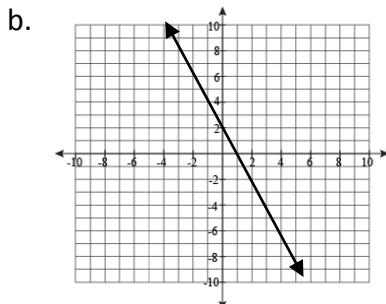
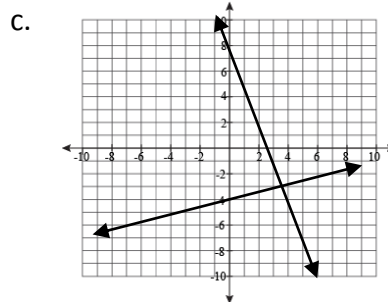
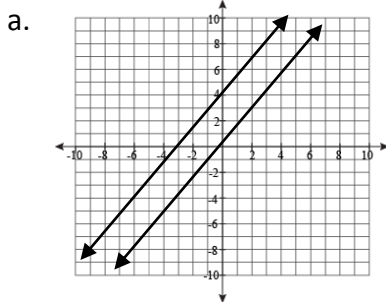
- a. The lines are collinear so there is no solution.
- b. The lines are parallel so there is no solution.
- c. The lines intersect at one point so there is no solution.

3) If $(3, y)$ is the solution to this system of equations, determine the value of y .

$$\begin{cases} 2x - 3y = 0 \\ 2x + y = 8 \end{cases}$$

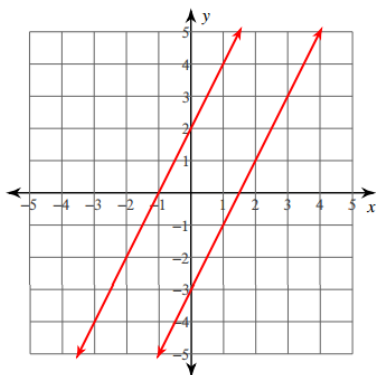
- a. 2
- b. 3
- c. 5
- d. 6

4) Which graph should be used to determine the solution of the system of equations: $\begin{cases} -3x + y = -4 \\ y = -3x + 8 \end{cases}$



5) What is the solution of the linear system below?

- a. $(-1, 1.5)$
- b. $(-3, 2)$
- c. Infinitely many solutions
- d. No solution



6) Solve this system of equations using any method you choose: $\begin{cases} 6x - y = -14 \\ 2x - 3y = 6 \end{cases}$

- a. $(-3, -4)$
- b. $(-4, -3)$
- c. $(-2, -2)$
- d. No solution

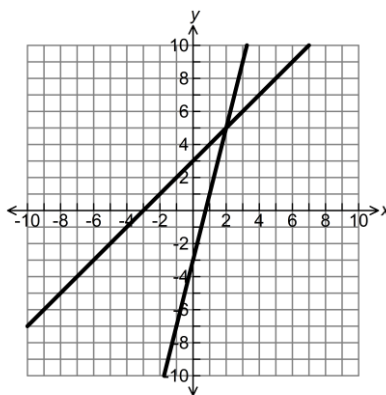
7) Solve the system of equations using substitution.

$$\begin{cases} x + y = 9 \\ y = 13 - 2x \end{cases}$$

- a. $(3, 6)$
- b. $(-3, 12)$
- c. $(0, 9)$
- d. $(4, 5)$

8) What is the system of equations represented by the graph below?

- a. $\begin{cases} x = 1 \\ y = 3 \end{cases}$
- b. $\begin{cases} y = x + 3 \\ y = 4x - 3 \end{cases}$
- c. $\begin{cases} y = 3x + 1 \\ y = -3x + 4 \end{cases}$
- d. $\begin{cases} y = 2x + 5 \\ y = -3x \end{cases}$



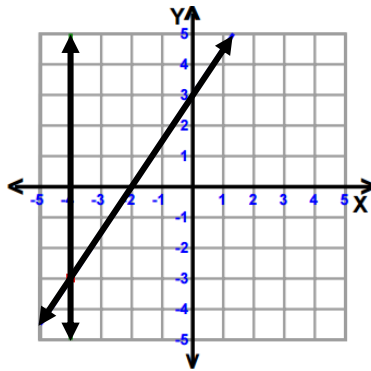
9) What is the system of equations represented by the graph below?

a. $\begin{cases} y = \frac{3}{2}x + 3 \\ x = -4 \end{cases}$

b. $\begin{cases} y = 3 \\ x = -4 \end{cases}$

c. $\begin{cases} y = 2x - 2 \\ y = x - 4 \end{cases}$

d. $\begin{cases} y = -4x \\ y = -2x + 3 \end{cases}$



10) What is true of the graphs of the two equations?

$$\begin{cases} y = -\frac{1}{2}x + 2 \\ 3x + 2y = 8 \end{cases}$$

a. The lines intersect in exactly one point, (2, 1)

b. The lines intersect in exactly one point, (0, 2)

c. The lines are parallel.

d. The lines are collinear.

11) Which system of linear equations has infinitely many solutions?

a. $\begin{cases} x - 5y = 10 \\ 3x - 15y = 15 \end{cases}$

b. $\begin{cases} y = 2x + 3 \\ -4x + 2y = 6 \end{cases}$

c. $\begin{cases} 3x + y = 15 \\ 3x - 2y = 6 \end{cases}$

d. $\begin{cases} y = 3x + 5 \\ y = \frac{1}{3}x - 1 \end{cases}$

12) What would be the slope of a line that is parallel to the line $y = \frac{1}{3}x + 2$?

a. 2

b. $\frac{1}{2}$

c. $\frac{1}{3}$

d. $-\frac{1}{3}$

13) Five baseballs and three footballs cost \$88. The cost of two baseballs and seven footballs is \$186. Which system of equations could be used to find the cost of one baseball, b , and one football, f ?

a. $\begin{cases} 3b + 3f = 88 \\ 2b + 7f = 186 \end{cases}$

b. $\begin{cases} 5b + 3f = 88 \\ 7b + 2f = 186 \end{cases}$

c. $\begin{cases} 5b + 3f = 88 \\ 2b + 7f = 186 \end{cases}$

d. $\begin{cases} 3b + 5f = 88 \\ 2b + 7f = 186 \end{cases}$

14) Ms. Lewis bought dry erase boards and markers for her class. When she bought 12 dry erase boards and 20 markers, the cost was \$44. When she bought 5 dry erase boards and 30 markers, the cost was \$40. What is the price of one marker?

- a. \$1.00
- b. \$1.25
- c. \$1.50
- d. \$2.00

15) You have been given two job offers – job A and job B as shown in the table below. After how many years is the salary equal?

- a. 20 years
- b. 10 years
- c. 5 years
- d. 4 years

Job	Starting Salary	Yearly Increase
A	\$20,000	\$1000
B	\$35,000	\$250

16) A DVD service has a membership plan in which a person pays a membership fee of \$10 plus \$1.25 for each DVD rented. Nonmembers pay \$2.00 for each DVD rented. What is the fewest amount of DVDs a person would need to rent to make the membership a better deal?

- a. 10
- b. 14
- c. 15
- d. 18

17) The following problem was given on a test in Ms. Field's class. The work of one of her students is shown. Analyze the work to determine if the student solved the problem correctly. If the problem was incorrectly, determine the error.

Step 1:	$3x - 2\left(\frac{3}{2}x - 4\right) = 8$
Step 2:	$3x - 3x + 8 = 8$
Step 3:	$x + 8 = 8$
Step 4:	$x = 0$
Step 5:	$y = \frac{3}{2}(0) - 4$
Step 6:	$y = 0 - 4$
Step 7:	$y = -4$
Step 8:	<i>The solution is (0, -4).</i>

- The student solved the problem correctly.
- The student distributed incorrectly from step 1 to Step 2.
- The student incorrectly combined like terms from Step 2 to Step 3.
- The student should have solved for y first.

Answer Key

1) B

2) B

3) A

4) D

5) D

6) A

7) D

8) B

9) A

10) A

11) B

12) C

13) C

14) A

15) A

16) C

17) C