

Ottocento Lesson #6 Linear Systems: How Many Solutions? Worksheet

Video Solutions at: <https://youtu.be/tyMrr1eagX4>

Question 1

At how many points do the graphs of the equations intersect in the xy-plane?

$$y = 6x + 3$$

$$y = 6x - 8$$

- A) 0
- B) 1
- C) 2
- D) infinitely many

Question 2

At how many points do the graphs of the equations intersect in the xy-plane?

$$y = -3x - 12$$

$$y = -2x + 4$$

- A) 0
- B) 1
- C) 2
- D) infinitely many

Question 3

At how many points do the graphs of the equations intersect in the xy-plane?

$$y = 8x + 1$$

$$y = 8x + 1$$

- A) 0
- B) 1
- C) 2
- D) infinitely many

Question 4

How many solutions does the equation below have?

$$9(3x - 6) = 27(x - 2)$$

- A) 0
- B) 1
- C) 2
- D) infinitely many

Question 5

How many solutions does the equation below have?

$$12x + 3 = 12x$$

- A) 0
- B) 1
- C) 2
- D) infinitely many

Question 6

How many solutions does the equation below have?

$$7(-2x + 5) = 11 - 6x$$

- A) 0
- B) 1
- C) 2
- D) infinitely many



Question 7

Consider the system of equations given below. The system of equations has no solution. What is the value of b ?

$$y = -9x + 2$$

$$y = 2bx - 17$$

Question 8

Consider the system of equations given below. The system of equations has infinitely many solutions. What is the value of c ?

$$y = 10x + 2b$$

$$y = -5bx + 5c$$

Question 9

Consider the equation below. The equation has one solution. What CANNOT be the value of k ?

$$kx + 16 = 8(4x + 2)$$



Question 10

The equation below has no solutions where a and b are constants. Which of the following must be true?

$$5(-3x + 8a) = -ax + 4x - 20b$$

- I.* $a = 19$
- II.* $b = 40$
- III.* $b \neq -38$

- A) I only
- B) II only
- C) I and II only
- D) I and III only

Question 11

At how many points do the graphs of the equations intersect in the xy -plane?

$$\begin{aligned} 7x + 13y &= 20 \\ 14x + 26y &= 28 \end{aligned}$$

- A) 0
- B) 1
- C) 2
- D) infinitely many

Question 12

At how many points do the graphs of the equations intersect in the xy -plane?

$$\begin{aligned} -5x + y &= 17 \\ 15x - 3y &= -51 \end{aligned}$$

- A) 0
- B) 1
- C) 2
- D) infinitely many

Question 13

Consider the system of equations given below. The system of equations has no solution. What is the value of b ?

$$-10x - 5y = 23$$

$$25x + by = -4$$

Question 14

In the given system of equations p is a constant. If the system has infinitely many solutions, what is the value of p ?

$$8x - 12y + 5 = 17 - 3y$$

$$-26x + \frac{63}{2}y = -7p + 2x$$



Question 15

In the given system of equations p is a constant. If the system has no solution, what is the value of p ?

$$\frac{5}{12}x + \frac{9}{4}y = \frac{9}{2} - \frac{1}{3}x$$

$$-\frac{24}{7}x + 5 = py - \frac{222}{7}$$