



Identify systems with infinitely many solutions

1How would you check whether $(x, y) = (0, 4)$ is a solution to this system of linear equations?

$$3x + 3y = 12$$

$$2x + 2y = 8$$

A

$$3(0) + 3(4) = 12$$

$$2(0) + 2(4) = 8$$

B

$$3(4) + 3(0) = 12$$

$$2(4) + 2(0) = 8$$

C

$$3(1) + 3(4) = 12$$

$$2(1) + 2(4) = 8$$

D

$$3(0) + 3(4) = 12$$

$$2x + 2y = 8$$

2Is $(x, y) = (0, -3)$ a solution to this system of linear equations?

$$4x + y = -3$$

$$x + 3y = -9$$

A

No

B

Yes

3

How many solutions does this linear equation have?

$$3(2x + 2) = 6x + 6$$

A

One solution

B

Infinitely many solutions

C

Zero solutions

4

One solution

A

$$3(3x + 3) = 2x + 1$$

B

$$2(4x + 3) = 8x + 6$$

5

Add or subtract multiples of the second equation to the first equation to form a single solvable equation

$$\begin{array}{r} 2y + 6x = 52 \\ 4y - 3x = -16 \\ \hline y = ? \end{array}$$

A

$$2y - 10y = 52$$

B

$$2y + 10y = 52$$

C

$$10y = 20$$

D

$$2y - 6y + 5 = -16$$

E

$$10y = 10$$

F

$$4y + 6 = y$$



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Substitute the second equation into the first equation to form a single solvable equation

$$4n + 4z = 112$$

$$z = 4n - 7$$

$$n = ?$$

A $28n - 4n + 7 = 112$

B $4n + 4 = n$

C $4n + 16n - 28 = 112$

D $4n - 28n = 112$

E $16n - 4n - 5 = 112$

F $4n - 4n + 6 = 16$

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The lines are the same line

A Zero solutions

B Infinitely many solutions

C One solution

8

Zero solutions

A The lines cross at one point

B The lines are parallel

C The lines are the same line

9

Which graph matches this system of linear equations?

$$2x + 4y = 6$$

$$2x + 4y = 4$$

**10**

The lines are parallel

A

$$\begin{aligned} x + 3y &= 0 \\ 4x + 2y &= -4 \end{aligned}$$

B

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

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Infinitely many solutions

A

$$\begin{aligned} 4x + 4y &= -2 \\ 8x + 8y &= -4 \end{aligned}$$

B

$$\begin{aligned} 2x + 4y &= -3 \\ 3x + 2y &= 8 \end{aligned}$$

12

How many solutions does this system of linear equations have?

$$x + 3y = 3$$

$$x + 3y = 2$$

A One solution

B Infinitely many solutions

C Zero solutions

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One solution

