DO NOW

Is (2, 2) a solution to the system of equations?

$2x = y + 2$

$x + y = 7$

$2 + 2 \neq 7$

No Solution

Mar 8-11:26 AM

Homework Answers

1) (5, 3)

2) No solution

3) (2, 7)

4) (-5, 40)

Dec 8-10:11 AM

Systems of Equations - Elimination Method

Solving systems of linear equations by addition.

1. Variables, Constants, Operations, Equal Signs must be "lined up"

2. Make sure the variable being eliminated has the same coefficient with opposite signs. (One has to be negative one has to be positive!) Multiply if necessary to create new equations.

3. Add your two equations together, and one of the variables should eliminate!

4. Solve

5. Substitute back into one of the original equations to find the other variable.

6. Check your solution

Jan 14-12:57 PM

Example 1:

$3x + 2y = 6$

-1

$x + 2y = -2$

$-3x - 2y = -6$

$+ \quad x + 2y = -2$

$-2x = -8$

$\frac{-2x}{-2} = \frac{-8}{-2}$

$x = 4$

$x + 2y = -2$

$(4) + 2y = -2$

$-4 \quad -4$

$2y = -6$

$\frac{2y}{2} = \frac{-6}{2}$

$y = -3$

Solution

$(4, -3)$

$3x + 2y = 6$

$3(4) + 2(-3) = 6$

$12 - 6 = 6$

$6 = 6$ ✓

$x + 2y = -2$

$4 + 2(-3) = -2$

$4 - 6 = -2$

$-2 = -2$ ✓

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Example 2:

$3[x - y = 2]$

$5x + 3y = 18$

$+ 3x - 3y = 6$

$8x = 24$

$\frac{8x}{8} = \frac{24}{8}$

$x = 3$

$x - y = 2$

$3 - y = 2$

$-3 \quad -3$

$-y = -1$

$\frac{-y}{-1} = \frac{-1}{-1}$

$y = 1$

Solution

(3, 1)

$x - y = 2$

$3 - 1 = 2$

$2 = 2$ ✓

$5x + 3y = 18$

$5(3) + 3(1) = 18$

$15 + 3 = 18$

$18 = 18$ ✓

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Example 3:

$3x + 3y = 4$

$-3[x + y = 2]$

$-3x - 3y = -6$

$+ 3x + 3y = 4$

$0 \neq -2$

No Solution

Nov 17-10:28 AM

Example 5:

$8x + 5y = 1$

$2[-4x - 3y = 1]$

$-8x - 6y = 2$

$-1y = 3$

$\frac{-1y}{-1} = \frac{3}{-1}$

$y = -3$

$8x + 5(-3) = 1$

$8x - 15 = 1$

$+15 \quad +15$

$\frac{8x}{8} = \frac{16}{8}$

$x = 2$

$(2, -3)$

Nov 19-8:56 AM