Method of Elimination

Adding or Subtracting two linear equations in order to eliminate the y variable or the x variable. Solve for one variable and substitute it's value into one of the original equations to solve for the other variable

Jan 19-11:11 AM

4

$4x + 2y = 6$ $\quad ax + by = c$

$\ominus\ -2x + 2y = 18$

$\frac{6x}{6} = \frac{-12}{6}$

$\boxed{x = -2}$ $\quad \boxed{(-2,7)}$

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

$-8 + 2y = 6$

$+8 \qquad +8$

$\frac{2y}{2} = \frac{14}{2}$

$\boxed{y = 7}$

Jan 19-11:37 AM

6.

$10x - 3y = 18$

$\oplus\ -2x + 3y = 6$

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

$\boxed{x = 3}$ $\quad \boxed{(3,4)}$

$10(3) - 3y = 18$

$30 - 3y = 18$

$-30 \qquad -30$

$\frac{-3y}{-3} = \frac{-12}{-3}$

$\boxed{y = 4}$

Jan 19-11:44 AM

7)

$x - y = 10$

$\oplus\ 3x + y = 18$

$4x = 28$

$\boxed{x = 7}$

$7 - y = 10$

$-7 \qquad -7$

$-y = 3$

$\boxed{y = -3}$

$(7,-3)$

Jan 19-11:47 AM

$x = 3y + 11$

$2x - 3y = 16$

$\ominus\ x - 3y = 11$

$x = 5$

$\boxed{(5,-2)}$

$5 = 3y + 11$

$-11 \qquad -11$

$\frac{-6}{3} = \frac{3y}{3}$

$-2 = y$

Jan 19-11:48 AM

9.

$4y = 2x - 8$

$5x - 4y = 20$

$\oplus\ -2x + 4y = -8$

$3x = 12$

$x = 4$

$4y = 2(4) - 8$

$4y = 8 - 8$

$\frac{4y}{4} = \frac{0}{4}$

$\boxed{y = 0}$

$4y = 2x - 8$

$-2x \qquad -2x$

$-2x + 4y = -8$

$\boxed{(4,0)}$

Jan 19-11:51 AM

10

$3x - 4y = -10$
$3x - 4y = -13$

$m = \frac{-a}{b}$ $\frac{-3}{-4}$ $\frac{3}{4}$

Jan 19-11:54 AM

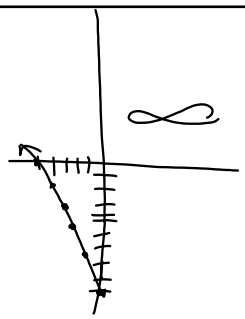
11

$2x + y = -10$

$\frac{-y}{-1} = \frac{2x}{-1} \frac{+10}{-1}$

$y = -2x - 10$

Infinetly Many



∞

Jan 19-11:56 AM

(x, y)

$5 = 2$ N/S

$5 = 5$ ∞

Jan 19-11:59 AM

P14

① $2(x + 3y = 6)$
$2x - 7y = -1$

$2x + 6y = 12$
$\ominus$ $2x - 7y = -1$

$13y = 13$

$y = 1$

$x + 3(1) = 6$
$x + 3 = 6$
$-3 \quad -3$
$x = 3$

$\boxed{(3, 1)}$

Jan 19-12:00 PM

2) P14

$9x + 3y = 12$
$3(2x + y = 5)$

$6x + 3y = 15$
$\ominus$ $9x + 3y = 12$

$\frac{-3x}{-3} = \frac{3}{-3}$

$\boxed{x = -1}$

$9(-1) + 3y = 12$
$-9 + 3y = 12$
$+9 \quad + 9$
$3y = 21$
$\boxed{y = 7}$

$(-1, 7)$

Jan 19-12:07 PM

7) P15

$2(3x + 4y = 6)$
$7x + 8y = 10$

$\ominus$ $6x + 8y = 12$

$x = -2$

$3(-2) + 4y = 6$
$-6 + 4y = 6$
$+6 \quad +6$
$4y = 12$
$\boxed{y = 3}$

$\boxed{(-2, 3)}$

Jan 19-12:14 PM

9) $5x + 9y = -10$
$7x + 10y = -1$

$7(5x + 9y = -10)$
$5(7x + 10y = -1)$

or

$10(5x + 9y = -10)$
$9(7x + 10y = -1)$

$\cancel{35x} + 63y = -70$
$\ominus\ \cancel{35x} + 50y = -5$

$\frac{13y}{13} = \frac{-65}{13}$

$\boxed{y = -5}$

$50x + 90y = -100$
$\ominus\ 63x + 90y = -9$

$-13x = -91$

$\boxed{x = 7}$

Jan 19-12:22 PM

pages 16-17

Jan 19-12:35 PM