

Algebra 1

Chapter 6

Section 6-3 part 2

Jan 1-11:23 AM

Elimination Method

$$\begin{array}{r} 3x - 6y = 9 \\ x + 6y = 11 \\ \hline 4x = 20 \\ \frac{4x}{4} = \frac{20}{4} \\ x = 5 \end{array}$$

Solution
(5, 1)

$$\begin{array}{r} 5 + 6y = 11 \\ -5 \\ \hline 6y = 6 \\ y = 1 \end{array}$$

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Elimination Method

$$\begin{array}{r} 7x + 5y = 10 \\ 4x + 5y = -5 \end{array}$$

mult by -1

$$\begin{array}{r} 7x + 5y = 10 \\ -4x - 5y = 5 \\ \hline 3x = 15 \\ \frac{3x}{3} = \frac{15}{3} \\ x = 5 \end{array}$$

Solution
(5, -5)

$$\begin{array}{r} 4(5) + 5y = -5 \\ 20 + 5y = -5 \\ -20 \quad -20 \\ \hline 5y = -25 \\ \frac{5y}{5} = \frac{-25}{5} \\ y = -5 \end{array}$$

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Elimination Method

$$\begin{array}{r} 3x - y = 9 \\ -2x + 5y = 20 \end{array}$$

mult by 5

$$\begin{array}{r} 15x - 5y = 45 \\ -2x + 5y = 20 \\ \hline 13x = 65 \\ \frac{13x}{13} = \frac{65}{13} \\ x = 5 \end{array}$$

same

$$\begin{array}{r} 3(5) - y = 9 \\ 15 - y = 9 \\ -15 \quad -15 \\ \hline -y = -6 \\ \frac{-y}{-1} = \frac{-6}{-1} \\ y = 6 \end{array}$$

Solution
(5, 6)

Y=6

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Elimination Method

$3x + 2y = 5$
 $9x + 7y = 13$

mult. by -3

~~$-9x - 6y = -15$~~
 $9x + 7y = 13$

$y = -2$

Solution
 $(3, -2)$

same

$3x + 2(-2) = 5$
 $3x - 4 = 5$
 $\quad +4 \quad +4$
 $3x = 9$
 $\frac{3x}{3} = \frac{9}{3}$
 $x = 3$

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Elimination Method

$4x + 2y = 2$
 $3x + 7y = -4$

mult by 3

~~$12x + 6y = 6$~~
 ~~$-12x - 28y = 16$~~

$-22y = 22$
 $y = -1$

Solution
 $(1, -1)$

mult by -4

$4x + 2(-1) = 2$
 $4x - 2 = 2$
 $\quad +2 \quad +2$
 $4x = 4$
 $\frac{4x}{4} = \frac{4}{4}$
 $x = 1$

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Elimination Method

$$\begin{array}{r}
 \text{mult by } 5 \swarrow \\
 9x - 2y = 12 \\
 5x + 5y = 25 \\
 \hline
 45x - 10y = 60 \quad \searrow \text{mult by } 2 \\
 10x + 10y = 50 \\
 \hline
 55x = 110 \\
 \frac{55x}{55} = \frac{110}{55} \\
 x = 2
 \end{array}$$

$5(2) + 5y = 25$
 $10 + 5y = 25$
 $-10 \quad -10$
 $5y = 15$
 $\frac{5y}{5} = \frac{15}{5}$
 $y = 3$

Solution
(2, 3)

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Elimination Method

$$\begin{array}{r}
 \text{mult by } 11 \swarrow \\
 6x - y = 0 \\
 2x + 11y = 34 \\
 \hline
 66x - 11y = 0 \\
 \hline
 68x = 34 \\
 \frac{68x}{68} = \frac{34}{68} \\
 x = \frac{1}{2}
 \end{array}$$

$6\left(\frac{1}{2}\right) - y = 0$
 $3 - y = 0$
 $-3 \quad -3$
 $-y = -3$
 $\frac{-y}{-1} = \frac{-3}{-1}$
 $y = 3$

Solution
($\frac{1}{2}$, 3)

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