

Substitution Worksheet

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Solve each system of equations.

$$\begin{aligned} 1) \quad & x^2 + y^2 - 15x - 3y + 46 = 0 \\ & x + y - 4 = 0 \end{aligned}$$

$$\begin{aligned} 2) \quad & x^2 + y^2 - 26x - y + 68 = 0 \\ & -2x + y + 3 = 0 \end{aligned}$$

$$\begin{aligned} 3) \quad & 4x^2 - 5y^2 + 3x - 7y - 18 = 0 \\ & x + y = -2 \end{aligned}$$

$$\begin{aligned} 4) \quad & -4x^2 + 3x + 15y + 145 = 0 \\ & x - 3y = 1 \end{aligned}$$

$$5) \begin{aligned} 12x^2 + 6y^2 - 25x + 9y + 16 &= 0 \\ x + 3y + 2 &= 0 \end{aligned}$$

$$6) \begin{aligned} 6x^2 + 2y^2 + 19x + 3y + 8 &= 0 \\ x + y &= 0 \end{aligned}$$

$$7) \begin{aligned} 2x^2 + 2y^2 + 8x + 27y + 6 &= 0 \\ -2x^2 + y^2 - 8x + 3y - 6 &= 0 \end{aligned}$$

$$8) \begin{aligned} y^2 + 16x + 4y - 69 &= 0 \\ -5x^2 + y^2 + 51x + 4y - 129 &= 0 \end{aligned}$$

$$\begin{aligned} 9) \quad & -2x^2 + 9x + y + 89 = 0 \\ & -2x^2 + 28x + y + 184 = 0 \end{aligned}$$

$$\begin{aligned} 10) \quad & x^2 + y^2 - 10x - 10y + 10 = 0 \\ & x^2 + 25y^2 - 10x + 38y + 34 = 0 \end{aligned}$$

$$\begin{aligned} 11) \quad & x^2 + y^2 + x - 10y - 31 = 0 \\ & x^2 + y^2 - 3x - 10y - 3 = 0 \end{aligned}$$

$$\begin{aligned} 12) \quad & 2x^2 + 2y^2 + 28x + 7y + 83 = 0 \\ & 2x^2 + 5y^2 + 28x + 31y + 128 = 0 \end{aligned}$$

Answers to Substitution Worksheet

- 1) $(5, -1)$ 2) $(4, 5)$ 3) $(-6, 4), (-4, 2)$ 4) $(-5, -2), (7, 2)$
5) $(1, -1)$ 6) $(-1, 1)$ 7) $(-1, 0), (-3, 0), (4, -10), (-8, -10)$
8) $(4, 1), (4, -5), (3, 3), (3, -7)$ 9) $(-5, 6)$ 10) $(7, -1), (3, -1)$
11) $(7, 5)$ 12) $(-7, -5), (-4, -3), (-10, -3)$