

Name KeyPeriod ABCDEF Date _____Substitution Practice

1. $8x + 6y = 16$

$y = 4$

$8x + 6(4) = 16$

$8x + 24 = 16$

$8x = -8$

$x = -1$

$(-1, 4)$

2. $x = -2$

$-4x + 4y = -16$

$-4(-2) + 4y = -16$

$8 + 4y = -16$

$4y = -24$

$y = -6$

$(-2, -6)$

3. $-x - 4y = 20$

$y = -6x + 18$

$-x - 4(-6x + 18) = 20$

$-x + 24x - 72 = 20$

$23x - 72 = 20$

$23x = 92$

$x = 4$

$y = -6(4) + 18$

$y = -24 + 18$

$y = -6$

$(4, -6)$

4. $y = x - 20$

$x + y = 84$

$x + (x - 20) = 84$

$x + x - 20 = 84$

$2x - 20 = 84$

$2x = 104$

$x = 52$

$y = 52 - 20$

$y = 32$

$(52, 32)$

5. $3x - y = 7$

$y = 5x - 13$

$3x - (5x - 13) = 7$

$3x - 5x + 13 = 7$

$-2x + 13 = 7$

$-2x = -6$

$x = 3$

$(3, 2)$

$y = 5(3) - 13$

$y = 15 - 13$

$y = 2$

6. $x = 6 - 4y$

$2x - 3y = 1$

$2(6 - 4y) - 3y = 1$

$12 - 8y - 3y = 1$

$12 - 11y = 1$

$-11y = -11$

$y = 1$

$x = 6 - 4(1)$

$x = 6 - 4$

$x = 2$

$(2, 1)$

$$7. \quad 3x + y = 4 \rightarrow y = -3x + 4$$

$$6x + 2y = 7$$

$$6x + 2(-3x + 4) = 7$$

$$6x - 6x + 8 = 7$$

$$8 = 7 \text{ False}$$

No solution

$$8. \quad y = 3x - 6$$

$$-3x + y = -6$$

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

$$-3x + 3x - 6 = -6$$

$$-6 = -6 \text{ True}$$

Infinite solutions

$$9. \quad -3x + y = 7 \rightarrow y = 3x + 7$$

$$2x - 3y = 7$$

$$2x - 3(3x + 7) = 7$$

$$2x - 9x - 21 = 7$$

$$-7x - 21 = 7$$

$$-7x = 28$$

$$x = -4$$

$$y = 3(-4) + 7$$

$$y = -12 + 7$$

$$y = -5$$

$(-4, -5)$

$$10. \quad x - 3y = 9 \rightarrow x = 3y + 9$$

$$2x + 3y = -9$$

$$2(3y + 9) + 3y = -9$$

$$6y + 18 + 3y = -9$$

$$9y + 18 = -9$$

$$9y = -27$$

$$y = -3$$

$(0, -3)$

$$x = 3(-3) + 9$$

$$x = -9 + 9$$

$$x = 0$$

$$11. \quad 3x + y = -19 \rightarrow y = -3x - 19$$

$$2x + 5y = -4$$

$$2x + 5(-3x - 19) = -4$$

$$2x - 15x - 95 = -4$$

$$-13x - 95 = -4$$

$$-13x = 91$$

$$x = -7$$

$$y = -3(-7) - 19$$

$$y = 21 - 19$$

$$y = 2$$

$(-7, 2)$