Kuta Software - Infinite Pre-Algebra Name Key

Solving Systems of Equations by Substitution

Date _____ Period ____

Solve each system by substitution.

1) $y = 7x - 10$
$y = -3$

$7x + 10 = -3$
$-10 \quad -10$
$\frac{7x}{7} = \frac{7}{7}$
$x = 1$

(1, -3)

2) $y = -8$
$y = -2x - 12$

$-8 = -2x - 12$
$+12 \quad +12$
$\frac{4}{-2} = \frac{-2x}{-2}$
$-2 = x$

(-2, -8)

3) $y = 6x$
$y = 5x + 7$

$6x = 5x + 7$
$-5x \quad -5x$
$x = 7$

$y = 6(7)$
$y = 42$

(7, 42)

4) $y = 9x - 9$
$y = 9$

$9 = 9x - 9$
$+9 \quad +9$
$\frac{18}{9} = \frac{9x}{9}$
$2 = x$

(2, 9)

5) $y = -4$
$y = x - 8$

$-4 = x - 8$
$+8 \quad +8$
$4 = x$

(4, -4)

6) $y = 8x - 9$
$y = 7$

$7 = 8x - 9$
$+9 \quad +9$
$\frac{16}{8} = \frac{8x}{8}$
$2 = x$

(2, 7)

7) $y = 6x - 14$
$y = -8x$

$-8x = 6x - 14$
$-6x \quad -6x$
$\frac{-14x}{-14} = \frac{-14}{-14}$
$x = 1$

$y = -8(1)$
$y = -8$

(1, -8)

8) $y = 2x - 15$
$y = 5x$

$5x = 2x - 15$
$-2x \quad -2x$
$\frac{3x}{3} = \frac{-15}{3}$
$x = -5$

$y = 5(-5)$
$y = -25$

(-5, -25)

9) $y = -8x$
$2x + 4y = 0$

$2x + 4(-8x) = 0$
$2x + -32x = 0$
$-30x = 0$
$\frac{-30x}{-30} = \frac{0}{-30}$
$x = 0$

$y = -8(0)$
$y = 0$

$(0, 0)$

10) $6x + 7y = 20$
$y = 2x$

$6x + 7(2x) = 20$
$6x + 14x = 20$
$\frac{20x}{20} = \frac{20}{20}$
$x = 1$

$y = 2(1)$
$y = 2$

$(1, 2)$

11) $-3x - 5y = 6$
$y = -3$

$-3x + -5(-3) = 6$
$-3x + 15 = 6$
$-15 \quad -15$
$\frac{-3x}{-3} = \frac{-9}{-3}$
$x = 3$

$(3, -3)$

12) $6x - 5y = 22$
$y = -8$

$6x + -5(-8) = 22$
$6x + 40 = 22$
$-40 \quad -40$
$\frac{6x}{6} = \frac{-18}{6}$
$x = -3$

$(-3, -8)$

13) $y = 2x$
$3x + 3y = -18$

$3x + 3(2x) = -18$
$3x + 6x = -18$
$\frac{9x}{9} = \frac{-18}{9}$
$x = -2$

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

$(-2, -4)$

14) $y = 8x$
$-5x - 5y = 0$

$-5x + -5(8x) = 0$
$-5x + -40x = 0$
$\frac{-45x}{-45} = \frac{0}{-45}$
$x = 0$

$y = 8(0)$
$y = 0$

$(0, 0)$

15) $y = -3$
$-5x - 3y = 14$

$-5x + -3(-3) = 14$
$-5x + 9 = 14$
$-9 \quad -9$
$\frac{-5x}{-5} = \frac{5}{-5}$
$x = -1$

$(-1, -3)$

16) $y = 3x$
$-3x - y = -24$

$-3x + -3x = -24$
$\frac{-6x}{-6} = \frac{-24}{-6}$
$x = 4$

$y = 3(4)$
$y = 12$

$(4, 12)$