

Solving Equations with Variables and Constants on Both Sides WS#1

Solve each equation. Show all required work. Be sure your variable is on the left side in your final answer.

$$1) \overset{+11}{-11} + \overset{+11}{6x} = 1 + 4x$$

$$6x = 12 + 4x$$

$$2x = 12$$

$$\frac{2x}{2} = \frac{12}{2}$$

$$\boxed{x = 6}$$

$$2) \overset{-6x}{4} + \overset{-6x}{4x} = 6x + 2$$

$$4 - 2x = 2$$

$$-2x = -2$$

$$\frac{-2x}{-2} = \frac{-2}{-2}$$

$$\boxed{x = 1}$$

$$3) \overset{+5}{-5x} - \overset{+5}{5} = -7x + 1$$

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

$$2x = 6$$

$$\frac{2x}{2} = \frac{6}{2}$$

$$\boxed{x = 3}$$

$$4) \overset{-2a}{-a} - \overset{-2a}{15} = 2a - 3$$

$$-3a - 15 = -3$$

$$-3a = 12$$

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

$$\boxed{a = -4}$$

$$5) \overset{-4a}{7a} - \overset{-4a}{7} = 4a + 11$$

$$3a - 7 = 11$$

$$3a = 18$$

$$\frac{3a}{3} = \frac{18}{3}$$

$$\boxed{a = 6}$$

$$6) \overset{-13}{13} + \overset{-13}{5x} = 1 + 8x$$

$$5x = -12 + 8x$$

$$-3x = -12$$

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

$$\boxed{x = 4}$$

Solving Equations w/vars & Constants on Both Sides w/ #1, cont.

$$7) 8a + 6 = -1 + 7a$$

$$a + 6 = -1$$

$$\boxed{a = -7}$$

$$8) 6 + b = 2b + 5$$

$$|b = 2b - 1$$

$$-1b = -1$$

$$\frac{-1}{-1} = \frac{-1}{-1}$$

$$\boxed{b = 1}$$

$$9) b - 3 = -15 + 5b$$

$$|b = -12 + 5b$$

$$-4b = -12$$

$$\frac{-4}{-4} = \frac{-12}{-4}$$

$$\boxed{b = 3}$$

$$10) -2r - 6 = -r - 11$$

$$-1r - 6 = -r - 11$$

$$-1r = -5$$

$$\frac{-1}{-1} = \frac{-5}{-1}$$

$$\boxed{r = 5}$$

$$11) -6 + 7x = 5x + 6$$

$$2x = 12$$

$$2x = 12$$

$$\frac{2}{2} = \frac{12}{2}$$

$$\boxed{x = 6}$$

$$12) 1 + x = -7 + 2x$$

$$| -x = -8$$

$$-x = -8$$

$$\frac{-1}{-1} = \frac{-8}{-1}$$

$$\boxed{x = 8}$$