SOLVING LINEAR EQUATIONS

NOTE: AT ANY STEP COMBINE LIKE TERMS AND COMBINE NUMBERS

1. GET RID OF PARENTHESIS
2. GET RID OF FRACTIONS
3. GET EVERYTHING WITH AN X ON SIDE, NUMBERS ON OTHER SIDE
4. DIVIDE BOTH SIDES BY THE NUMBER IN FRONT OF X

#1

$$-7x + 8 = -6$$
$$-7x = -6 - 8$$
$$-7x = -14$$
$$\frac{-7x}{-7} = \frac{-14}{-7}$$
$$\boxed{x = 2}$$

#2

$$\tfrac{1}{4}x - 2 = 1$$
$$4(\tfrac{1}{4}x) + 4(-2) = 4(1)$$
$$x - 8 = 4$$
$$x = 4 + 8$$
$$\boxed{x = 12}$$

#3

$$\underline{9x} + 3 \underline{\underline{-4x}} = 23$$
$$5x + 3 = 23$$
$$5x = 23 - 3$$
$$5x = 20$$
$$\frac{5x}{5} = \frac{20}{5}$$
$$\boxed{x = 4}$$

#4

$$5(x - 2) = -15$$
$$5x - 10 = -15$$
$$5x = -15 + 10$$
$$5x = -5$$
$$\frac{5x}{5} = \frac{-5}{5}$$
$$\boxed{x = -1}$$

#5

$$-4 = 5 - (7 + 2y)$$
$$-4 = 5 - 1(7 + 2y)$$
$$-4 = 5 - 7 - 2y$$
$$-4 = -2 - 2y$$
$$2y = -2 + 4$$
$$2y = 2$$
$$\frac{2y}{2} = \frac{2}{2}$$
$$\boxed{y = 1}$$

#6

$$-2(5 - 3x) = 2x + 8$$
$$-10 + 6x = 2x + 8$$
$$6x - 2x = 8 + 10$$
$$4x = 18$$
$$\frac{4x}{4} = \frac{18}{4}$$
$$\boxed{x = \frac{9}{2}}$$