

2.3 Multi-Step Equations

Ex 1) Solve by combining like terms.

$$7x - 4x = 21$$

$$\frac{3x}{3} = \frac{21}{3}$$

$$\boxed{x=7}$$

$$8x - 3x - 10 = 20$$

$$5x - 10 = 20$$

$$\begin{array}{r} +10 \\ +10 \end{array}$$

$$\frac{5x}{5} = \frac{30}{5}$$

$$\boxed{x=6}$$

$$5b - 7b = 4$$

$$9x + x - 7 = 13$$

$$11x - 9x = 18$$

Ex 2) Solve by using the distributive property.

$$7x + 2(x + 6) = 39$$

$$7x + 2x + 12 = 39$$

$$9x + 12 = 39$$

$$\begin{array}{r} -12 \\ -12 \end{array}$$

$$\frac{9x}{9} = \frac{27}{9}$$

$$\boxed{x=3}$$

~~$$\frac{2}{3} \cdot \frac{3}{2} (3x + 5) = \frac{-24}{1} \cdot \frac{2}{3}$$~~

~~$$3x + 5 = -16$$~~

$$3x + 5 = -16$$

$$\begin{array}{r} -5 \\ -5 \end{array}$$

$$\frac{3x}{3} = \frac{-21}{3}$$

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

$$4x - 7(x - 2) = 26$$

$$4x - 7x + 14 = 26$$

$$-3x + 14 = 26$$

$$\begin{array}{r} -14 \\ -14 \end{array}$$

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

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

~~$$\frac{4}{3} \cdot \frac{3}{4} (z - 6) = \frac{4}{1} \cdot \frac{4}{3}$$~~

$$z - 6 = 16$$

$$\begin{array}{r} +6 \\ +6 \end{array}$$

$$\boxed{z=22}$$

$$5x - 4(x - 3) = 17$$

$$5x - 4x + 12 = 17$$

$$x + 12 = 17$$

$$\begin{array}{r} -12 \\ -12 \end{array}$$

$$\boxed{x=5}$$

~~$$\frac{5}{2} \cdot \frac{2}{5} (3r + 4) = \frac{5}{1} \cdot \frac{5}{2}$$~~

$$3r + 4 = 25$$

$$\begin{array}{r} -4 \\ -4 \end{array}$$

$$\frac{3r}{3} = \frac{21}{3}$$

$$\boxed{r=7}$$