



Learning Target: I can solve equations with fractions.

Warmup:

1.) Solve: $10x + 12 = 24 + 6x$

$$\begin{array}{r} 10x + 12 = 24 + 6x \\ -12 \quad -12 \\ \hline 10x = 12 + 6x \\ -6x \quad -6x \\ \hline 4x = 12 \\ \frac{4x}{4} = \frac{12}{4} \\ x = 3 \end{array}$$

2.) Solve for x: $7x + 3n = 10 + 8n$

$$\begin{array}{r} 7x + 3n = 10 + 8n \\ -3n \quad -3n \\ \hline 7x = 10 + 5n \\ \frac{7x}{7} = \frac{10 + 5n}{7} \\ x = \frac{10 + 5n}{7} \end{array}$$

Find the LCM for each set of numbers.

3.) 2, 3

$$\begin{array}{l} 4 \text{ (6)} \\ 6 \text{ (9)} \\ 8 \text{ (12)} \\ 10 \\ 12 \end{array} \quad \boxed{6}$$

4.) 4, 6

$$\begin{array}{l} 8 \text{ (12)} \\ (12) \end{array} \quad \boxed{12}$$

5.) 2, 3, 5

$$\begin{array}{l} 18 \\ 20 \\ 22 \\ 24 \\ 26 \\ 28 \\ 30 \end{array} \quad \begin{array}{l} 4 \text{ (6)} \\ 6 \text{ (9)} \\ 8 \text{ (12)} \\ 10 \text{ (15)} \\ 12 \text{ (18)} \\ 14 \text{ (21)} \\ 16 \text{ (24)} \\ 18 \text{ (27)} \\ 20 \text{ (30)} \end{array} \quad \boxed{30}$$

Solve each equation.

6.) $\frac{7}{3}\left(x + \frac{9}{28}\right) = 20$

$$\begin{array}{l} \frac{7}{3}x + \frac{3}{4} = 20 \\ \frac{7}{3}x \cdot \frac{4}{12} + \frac{3}{4} \cdot \frac{3}{12} = 20 \cdot \frac{12}{12} \\ 28x + 9 = 240 \\ -9 \quad -9 \\ \hline 28x = 231 \\ \frac{28x}{28} = \frac{231}{28} \\ x = 8.25 \end{array}$$

7.) $\frac{1}{2}\left(x - \frac{8}{5}\right) = 20$

$$\begin{array}{l} \frac{1}{2}x - \frac{4}{5} = 20 \\ \frac{1}{2}x \cdot \frac{5}{10} - \frac{4}{5} \cdot \frac{2}{10} = 20 \cdot \frac{10}{10} \\ 5x - 8 = 200 \\ +8 \quad +8 \\ \hline 5x = 208 \\ \frac{5x}{5} = \frac{208}{5} \\ x = 41.6 \end{array}$$

$$8.) \frac{x-2}{3} + \frac{1}{6} = \frac{5}{6}$$

$$\frac{x-2}{3} \cdot \frac{2}{2} + \frac{1}{6} \cdot \frac{1}{1} = \frac{5}{6} \cdot \frac{1}{1}$$

$$2x - 4 + 1 = 5$$

$$2x - 3 = 5$$

$$2x = 8$$

$$x = 4$$

$$9.) \frac{3}{2} + \frac{x+3}{5} = 7$$

$$\frac{3}{2} \cdot \frac{10}{10} + \frac{x+3}{5} \cdot \frac{2}{2} = 7 \cdot \frac{10}{10}$$

$$15 + 2x + 6 = 70$$

$$2x + 21 = 70$$

$$2x = 49$$

$$x = 24.5$$

$$10.) \frac{x+5}{2} + \frac{1}{3} = \frac{2}{3}$$

$$\frac{x+5}{2} \cdot \frac{3}{3} + \frac{1}{3} \cdot \frac{2}{2} = \frac{2}{3} \cdot \frac{2}{2}$$

$$3x + 15 + 2 = 4$$

$$3x + 17 = 4$$

$$3x = -13$$

$$x = -\frac{13}{3}$$

$$11.) \frac{3}{4} \left(x + \frac{7}{12} \right) = 24$$

$$\frac{3}{4}x + \frac{7}{16} = 24$$

$$\frac{3}{4}x \cdot \frac{4}{4} + \frac{7}{16} \cdot \frac{16}{16} = 24 \cdot \frac{16}{16}$$

$$12x + 7 = 384$$

$$12x = 377$$

$$x = \frac{377}{12}$$

Simplify each expression.

$$12.) (-2x^4y^2)(-3x^2y)$$

$$6x^6y^3$$

$$13.) (-2x^4y^2)(-3x^2y)$$

$$-2x^4y^2 - 3x^2y$$

14.) What is the result when $(9x^2 + 2x - 11)$ is subtracted from $(2x^2 + 9x - 11)$? Express the answer in standard form.

$$(2x^2 + 9x - 11) - (9x^2 + 2x - 11)$$

$$2x^2 + 9x - 11 - 9x^2 - 2x + 11$$

$$-7x^2 + 7x$$