

In-Class Practice
Solving Equations by Clearing Fractions

Name: _____

$$1) \left(\frac{3w}{2} + 1 = w + \frac{9}{2} \right) 2$$

$$\begin{array}{r} 3w + 2 = 2w + 9 \\ -2w \quad -2w \\ \hline 1w + 2 = 9 \\ -2 \quad -2 \end{array}$$

$$\boxed{w = 7} \quad \checkmark$$

$$2) (2x - 1 = \frac{3}{4}x + 9) 4$$

$$\begin{array}{r} 8x - 4 = 3x + 36 \\ -3x \quad -3x \\ \hline 5x - 4 = 36 \\ +4 \quad +4 \\ \hline 5x = 40 \\ \frac{5x}{5} = \frac{40}{5} \end{array}$$

$$\boxed{x = 8} \quad \checkmark$$

$$3) \left(\frac{3}{4}a = \frac{2}{5} \right) 20$$

$$\frac{15a}{15} = \frac{8}{15}$$

$$\boxed{a = \frac{8}{15}}$$

or

$$\frac{\cancel{4}^3}{\cancel{2}^4} a = \frac{2}{5} \frac{4}{3} = \frac{8}{15} \quad \checkmark$$

$$4) 5\frac{1}{4} = 3\frac{1}{2}y + \text{improper}$$

$$\left(\frac{21}{4} = \frac{7}{2}y \right) 4$$

$$\frac{21}{14} = \frac{14y}{14}$$

$$\boxed{\frac{21}{14} = \frac{3}{2} = 1\frac{1}{2} = y} \quad \checkmark$$

$$5) \left(p - \frac{p}{6} = \frac{p}{3} + 2 \right) 6$$

$$6p - p = 2p + 12$$

$$\begin{array}{r} 5p = 2p + 12 \\ -2p \quad -2p \\ \hline 3p = 12 \\ \frac{3p}{3} = \frac{12}{3} \end{array}$$

$$\boxed{p = 4} \quad \checkmark$$

$$6) \left(\frac{x}{6} + \frac{4}{3} = \frac{1}{2}x - 1 \right) 18$$

$$\begin{array}{r} 2x + 24 = 9x + -18 \\ -2x \quad -2x \\ \hline 24 = 7x + -18 \\ +18 \quad +18 \end{array}$$

$$\frac{42 = 7x}{7 \quad 7}$$

$$\boxed{6 = x} \quad \checkmark$$

$$7) \left(\frac{1 \cdot 3}{4} - \frac{r \cdot 12}{8} = -\frac{5 \cdot 12}{12} \right) 12$$

$$\begin{array}{r} 3 - 2r = -5 \\ -3 \qquad -3 \end{array}$$

$$\begin{array}{r} -2r = -8 \\ -2 \qquad -2 \end{array}$$

$$\boxed{r = 4} \checkmark$$

$$9) \left(\frac{5 \cdot 3}{8} + \frac{1 \cdot 4}{6}x = \frac{5 \cdot 2}{12} + \frac{24}{z} \right) 24$$

$$\begin{array}{r} 15 + 4x = 10 + 24x \\ -10 \qquad -10 \end{array}$$

$$\begin{array}{r} 5 + 4x = 24x \\ -4x \qquad -4x \end{array}$$

$$\frac{5}{20} = \frac{20x}{20}$$

$$\boxed{\frac{5}{20} = \frac{1}{4} = x} \checkmark$$

$$11) \frac{5}{20}p + \frac{8}{20}p = \frac{1}{2}p - \frac{9}{20}$$

$$\left(\frac{13}{20}p = \frac{10}{20}p - \frac{9}{20} \right) 20$$

$$\begin{array}{r} 13p = 10p - 9 \\ -10p \qquad -10p \end{array}$$

$$\frac{3p}{3} = \frac{-9}{3}$$

$$\boxed{p = -3} \checkmark$$

$$8) \left(\frac{y \cdot 3}{4} + \frac{1 \cdot 1}{12} = \frac{y \cdot 4}{8} - \frac{1 \cdot 12}{8} \right) 12$$

$$\begin{array}{r} 3y + 1 = 4y - 2 \\ -3y \qquad -3y \end{array}$$

$$\begin{array}{r} 1 = 1y - 2 \\ +2 \qquad +2 \end{array}$$

$$\boxed{3 = y} \checkmark$$

$$10) \frac{1}{4}(m + 4) = 2 + \frac{1}{2}m$$

$$\left(\frac{1}{4}m + 1 = 2 + \frac{1}{2}m \right) 4$$

$$\begin{array}{r} m + 4 = 8 + 2m \\ -m \qquad -m \end{array}$$

$$\begin{array}{r} 4 = 8 + 1m \\ -8 \qquad -8 \end{array}$$

$$\boxed{-4 = 1m} \checkmark$$

$$12) \left(\frac{5}{8}x + \frac{1}{6} = \frac{5}{12} - \frac{1}{5} \right) 20$$

$$\left(\frac{3x}{20} + \frac{1}{20} = \frac{x}{4} - \frac{1}{5} \right) 20$$

$$\begin{array}{r} 3x + 2 = 5x - 4 \\ -3x \qquad -3x \end{array}$$

$$\begin{array}{r} 2 = 2x - 4 \\ +4 \qquad +4 \end{array}$$

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

$$\boxed{3 = x} \checkmark$$