

A. Solve for x.

1. Solve for x: $\frac{3(x-5)}{3} = \frac{18}{3}$

$$\begin{array}{r} x-5=6 \\ +5 \quad +5 \end{array}$$

$$\boxed{x=11}$$

2. Solve for x: $5x+3=2x-1$

$$\begin{array}{r} -2x \quad -3 \quad -2x \quad -3 \end{array}$$

$$\frac{3x}{3} = \frac{-4}{3}$$

$$\boxed{x = -\frac{4}{3}}$$

3. Solve for a: $2(4a-5) = 3a-5$

$$\begin{array}{r} 8a-10=3a-5 \\ -3a+10 \quad -3a+10 \end{array}$$

$$\frac{5a}{5} = \frac{5}{5}$$

$$\boxed{a=1}$$

4. Solve for x: $\frac{3}{4}x - 1 = \frac{1}{2}$

$$\begin{array}{r} +1 \quad +1 \quad \frac{1}{2} + \frac{2}{2} = \frac{3}{2} \\ \left(\frac{4}{3}\right) \frac{3}{4}x = \frac{3}{2} \left(\frac{4}{3}\right) \end{array}$$

$$\boxed{x=2}$$

5. Solve for y: $2(y-3) - (y+10) = -7y+8$

$$\begin{array}{r} 2y-6 \quad -y-10 = -7y+8 \end{array}$$

$$\begin{array}{r} 1y-16 = -7y+8 \\ +7y+16 \quad +7y+16 \end{array}$$

$$\frac{8y}{8} = \frac{24}{8}$$

$$\boxed{y=3}$$

6. Solve for n: $\frac{2}{3}n + 8 = 3n + 8$

$$\begin{array}{r} -8 \quad -8 \end{array}$$

$$\begin{array}{r} \frac{2}{3}n = 3n \\ -3n \quad -3n \end{array}$$

$$\begin{array}{r} -2\frac{1}{3}n = 0 \quad \text{or } \left(\frac{-3}{7}\right)\frac{7}{3}n = 0 \left(\frac{-3}{7}\right) \\ -\frac{2}{3}n \quad -2\frac{1}{2} \end{array}$$

$$\boxed{n=0}$$

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B. Solve each Literal Equation for x.

7. $y-x=7$

$$\begin{array}{r} -y \quad -y \end{array}$$

$$\begin{array}{r} (-1) \quad (-1) \\ -x = 7-y \end{array}$$

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

8. $3x+2y=z$

$$\begin{array}{r} -2y \quad -2y \end{array}$$

$$\frac{3x}{3} = \frac{z-2y}{3}$$

$$\boxed{x = \frac{z-2y}{3}}$$

9. $\frac{2}{3}x - 5 = y$

$$\begin{array}{r} +5 \quad +5 \end{array}$$

$$\left(\frac{3}{2}\right) \frac{2}{3}x = y+5 \left(\frac{3}{2}\right)$$

$$\boxed{x = \frac{3}{2}(y+5)} \text{ or}$$

$$x = \frac{3}{2}y + \frac{15}{2}$$

10. $5(x-10) = a$

$$\begin{array}{r} 5x-50=a \\ +50 \quad +50 \end{array}$$

$$\frac{5x}{5} = \frac{a+50}{5}$$

$$\boxed{x = \frac{a+50}{5}}$$

11. $-2(3+x) = y$

$$\begin{array}{r} -6-2x=y \\ +6 \quad +6 \end{array}$$

$$\frac{-2x}{-2} = \frac{y+6}{-2}$$

$$\boxed{x = \frac{-y-6}{2}} \text{ or}$$

12. $5x + xy = 3$

$$\begin{array}{r} x(s+y)=3 \\ 5+y \quad 5+y \end{array}$$

$$\boxed{x = \frac{3}{5+y}}$$