

Solving One Variable Equations

Distribution

Expand and simplify.

$$\begin{aligned} \text{a) } & \widehat{3(x+1)} \\ & = 3x + 3 \end{aligned}$$

$$\begin{aligned} \text{b) } & \widehat{-3(x-5)} \\ & = -3x + 15 \end{aligned}$$

$$\begin{aligned} \text{c) } & \widehat{-1(x-7)} \\ & = -x + 7 \end{aligned}$$

$$\begin{aligned} \text{d) } & \widehat{-2(x+1)} + 5x \\ & = \underline{-2x - 2} + 5x \\ & = 3x - 2 \end{aligned}$$

Solving Equations

Solve the following.

$$\begin{aligned} \text{a) } & 2x + 1 = 7 \\ & 2x = 7 - 1 \\ & 2x = 6 \\ & \frac{2x}{2} = \frac{6}{2} \\ & x = 3 \end{aligned}$$

$$\begin{aligned} & 5(4) - 2 = 3(4) + 6 \\ & = 18 \checkmark = 18 \checkmark \end{aligned}$$
$$\begin{aligned} \text{b) } & 5x - 2 = 3x + 6 \\ & 5x - 3x = 6 + 2 \\ & 2x = 8 \\ & \frac{2x}{2} = \frac{8}{2} \\ & x = 4 \checkmark \end{aligned}$$

$$\begin{aligned} \text{c) } & \widehat{3(x+3)} = x + 7 \\ & 3x + 9 = x + 7 \\ & 3x - 1x = 7 - 9 \\ & \frac{2x}{2} = \frac{-2}{2} \\ & x = -1 \end{aligned}$$

$$\begin{aligned} \text{d) } & \widehat{5(x-1)} - \widehat{1(x+3)} = x + 7 \\ & 5x - 5 - 1x - 3 = x + 7 \\ & 4x - 8 = x + 7 \\ & 4x - 1x = 7 + 8 \\ & \frac{3x}{3} = \frac{15}{3} \\ & x = 5 \end{aligned}$$