

5-2 Solving Equations with Variables on Each Side

Ex.1 Solve: $7x + 3 = 31$

$$\begin{array}{r} 7x + 3 = 31 \\ -3 \quad -3 \\ \hline 7x = 28 \\ \frac{7x}{7} = \frac{28}{7} \\ x = 4 \end{array}$$

Solve: $8y + 5 - y + 4 = 30$

$$\begin{array}{r} 8y + 5 - y + 4 = 30 \\ \underline{7y} + 9 = 30 \\ -9 \quad -9 \\ \hline 7y = 21 \\ \frac{7y}{7} = \frac{21}{7} \\ y = 3 \end{array}$$

Ex. 2

Solve:

$$\begin{array}{r}
 7x + 3 = 2x + 23 \\
 \underline{-2x \quad -2x} \\
 5x + 3 = 23 \\
 \underline{-3 \quad -3} \\
 5x = 20 \\
 \underline{\frac{1}{5}x \quad \frac{1}{5}x} \\
 x = 4
 \end{array}$$

$$x = 4$$

Solve:

$$\begin{array}{r}
 4y - 5 = 2y + 7 \\
 \underline{-2y \quad -2y} \\
 2y - 5 = 7 \\
 \underline{+5 \quad +5} \\
 2y = 12 \\
 \underline{\frac{1}{2}y \quad \frac{1}{2}y} \\
 y = 6
 \end{array}$$

$$y = 6$$

Ex. 3

Solve:

$$\begin{array}{r}
 5x + 12 = 2x \\
 \underline{-2x \quad -2x} \\
 3x + 12 = 0 \\
 \underline{-12 \quad -12} \\
 3x = -12 \\
 \underline{\frac{1}{3}x \quad \frac{1}{3}x} \\
 x = -4
 \end{array}$$

Solve:

$$\begin{array}{r}
 3y + 11 = 8y - 4 \\
 \underline{-3y \quad -3y} \\
 11 = 5y - 4 \\
 \underline{+4 \quad +4} \\
 15 = 5y \\
 \underline{\frac{15}{5} = \frac{5y}{5}} \\
 3 = y
 \end{array}$$

$$y = 3$$

Homework

p.231 #15-25 odds