

Answers

Solve $7n - 2 = 5n + 6$.

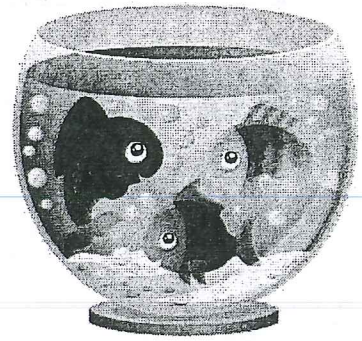
$$\begin{array}{r} 7n - 2 = 5n + 6 \\ -5n \quad -5n \\ \hline 2n - 2 = 6 \end{array}$$

$$\begin{array}{r} 2n - 2 = 6 \\ +2 \quad +2 \\ \hline 2n = 8 \end{array}$$

$$\begin{array}{r} 2n = 8 \\ \frac{2n}{2} = \frac{8}{2} \\ n = 4 \end{array}$$

To collect the variable terms on one side, subtract $5n$ from both sides.

Since n is multiplied by 2, divide both sides by 2 to undo the multiplication.



Solve each equation for the indicated variable.

1. $4x + 24 = 6x$

$$\begin{array}{r} 4x + 24 = 6x \\ -4x \quad -4x \\ \hline 24 = 2x \\ \frac{24}{2} = \frac{2x}{2} \end{array}$$

$$12 = x$$

2. $3y - 8 = 13 - 4y$

$$\begin{array}{r} 3y - 8 = 13 - 4y \\ +4y \quad +4y \\ \hline 7y - 8 = 13 \\ +8 \quad +8 \\ \hline 7y = 21 \\ \frac{7y}{7} = \frac{21}{7} \end{array}$$

$$y = 3$$

3. $5x = 14 - 2x$

$$\begin{array}{r} 5x = 14 - 2x \\ +2x \quad +2x \\ \hline 7x = 14 \\ \frac{7x}{7} = \frac{14}{7} \end{array}$$

$$x = 2$$

4. $8x - 1 = 47 - 4x$

$$\begin{array}{r} 8x - 1 = 47 - 4x \\ +1 \quad +1 \\ \hline 8x = 48 - 4x \\ +4x \quad +4x \\ \hline 12x = 48 \\ \frac{12x}{12} = \frac{48}{12} \end{array}$$

$$x = 4$$

5. $20 + x = 2 - 5x$

$$\begin{array}{r} 20 + x = 2 - 5x \\ +5x \quad +5x \\ \hline 20 + 6x = 2 \\ -20 \quad -20 \\ \hline 6x = -18 \\ \frac{6x}{6} = \frac{-18}{6} \end{array}$$

$$x = -3$$

6. $39x = 33x - 30$

$$\begin{array}{r} 39x = 33x - 30 \\ -33x \quad -33x \\ \hline 6x = -30 \\ \frac{6x}{6} = \frac{-30}{6} \end{array}$$

$$x = -5$$

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

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

$$(2) \frac{x}{2} = (x - 5)(2)$$

$$x = 2x - 10$$

$$\begin{array}{r} x = 2x - 10 \\ -2x \quad -2x \\ \hline -x = -10 \end{array}$$

$$(-1) -x = -10(-1)$$

$$x = 10$$

8. $\frac{4}{5}x = 6 - \frac{1}{5}x$

$$\begin{array}{r} \frac{4}{5}x = 6 - \frac{1}{5}x \\ +\frac{1}{5}x \quad +\frac{1}{5}x \\ \hline \frac{5}{5}x = 6 \end{array}$$

$$x = 6$$

9. $4y + 5 = 6y + 7$

$$\begin{array}{r} 4y + 5 = 6y + 7 \\ -4y \quad -4y \\ \hline 5 = 2y + 7 \\ -7 \quad -7 \\ \hline -2 = 2y \end{array}$$

$$\frac{-2}{2} = \frac{2y}{2}$$

$$-1 = y$$