Solve for x in the following equation.

$$5x - 6 = 3x + 8$$

Choose the smaller x-term

$5x - 6 = 3x + 8$

$-3x \qquad -3x$ Subtract 3x from both sides

$2x - 6 = 8$

$6 \qquad 6$ Add 6 to both sides

$\frac{2x}{2} = \frac{14}{2}$

$x = 7$ Divide both sides by 2

Check the solution by substituting 7 in the original equation for x. If the left side of the equation equals the right side of the equation after the substitution, you have found the correct answer.

- Left side: $5(7) - 6 = 29$
- Right side: $3(7) + 8 = 29$

Solve: $4x - 6 = 12x - 30$

$-4x \quad -4x$

$-6 = 8x - 30$

$+30 \quad +30$

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

$3 = x$

Solve: $8x + 12 = x - 51$

$-x \quad -x$

$7x + 12 = -51$

$-12 \quad -12$

$\frac{7x}{7} = \frac{-63}{7}$

$x = -9$

Solve: $5 + 3x = 12x - 13$

$-3x \quad -3x$

$5 = 9x - 13$

$13 \quad 13$

$\frac{18}{9} = \frac{9x}{9}$

$2 = x$

Solve: $-3(b+5) = 3(b-1)$

$-3b - 15 = 3b - 3$

$+3b \qquad +3b$

$-15 = 6b - 3$

$+3 \qquad +3$

$-12 = 6b$

$\frac{-12}{6} = \frac{6b}{6}$

$-2 = b$

Solve: $5n + 4 = 7(n+1) - 2n$

Solve: $3(a+1) - 5 = 3a - 2$