

Solve for x.

$$4x(x-3) = -5$$
$$2 \cdot 2 \quad 5 \cdot 1$$
$$4x^2 - 12x + 5 = 0$$

$$(2x-1)(2x-5) = 0$$

$$\begin{array}{r|l} 2x-1=0 & 2x-5=0 \\ +1 & +5 \\ \hline 2x=1 & 2x=5 \\ \frac{2x}{2} & \frac{2x}{2} \end{array}$$

$$x = \frac{1}{2}$$

$$x = \frac{5}{2}$$

Check

$$\begin{array}{l} 4x(x-3) = -5 \\ 4\left(\frac{1}{2}\right)\left(\frac{1}{2}-3\right) = -5 \\ 4\left(\frac{1}{2}\right)\left(\frac{1}{2}-\frac{6}{2}\right) = -5 \\ 4\left(\frac{1}{2}\right)\left(\frac{-5}{2}\right) = -5 \\ \frac{-20}{4} = -5 \\ -5 = -5 \checkmark \end{array} \quad \left. \begin{array}{l} 4x(x-3) = -5 \\ 4\left(\frac{5}{2}\right)\left(\frac{5}{2}-3\right) = -5 \\ 4\left(\frac{5}{2}\right)\left(\frac{5}{2}-\frac{6}{2}\right) = -5 \\ 4\left(\frac{5}{2}\right)\left(-\frac{1}{2}\right) = -5 \\ \frac{-20}{4} = -5 \\ -5 = -5 \checkmark \end{array} \right\}$$

Solve for x.

$$2x^2 + 3x = 9$$
$$2 \cdot 1 \quad 3 \cdot 3$$
$$2x^2 + 3x - 9 = 0$$

$$(2x-3)(x+3) = 0$$

$$\begin{array}{r|l} 2x-3=0 & x+3=0 \\ +3 & -3 \\ \hline 2x=3 & x=-3 \\ \frac{2x}{2} & \end{array}$$

$$x = \frac{3}{2}$$

p507 (4-3b)
even

Check

$$\begin{array}{l} 2x^2 + 3x = 9 \\ 2\left(\frac{3}{2}\right)^2 + 3\left(\frac{3}{2}\right) = 9 \\ 2\left(\frac{9}{4}\right) + \frac{9}{2} = 9 \\ \frac{18}{4} + \frac{9}{2} = 9 \\ \frac{9}{2} + \frac{9}{2} = 9 \\ \frac{18}{2} = 9 \\ 9 = 9 \checkmark \end{array} \quad \begin{array}{l} 2x^2 + 3x = 9 \\ 2(-3)^2 + 3(-3) = 9 \\ 2(9) - 9 = 9 \\ 18 - 9 = 9 \\ 9 = 9 \checkmark \end{array}$$