

Solve for  $x$ , in simplest radical form.

1.)  $2x^2 + 7x - 3 = 0$

$$x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a} = \frac{-7 \pm \sqrt{(7)^2 - 4(2)(-3)}}{2(2)}$$

$$x = \frac{-7 \pm \sqrt{49 + 24}}{4} = \boxed{\frac{-7 \pm \sqrt{73}}{4}}$$

2.)  $x^2 - 6x - 25 = 0$

$$x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a} = \frac{6 \pm \sqrt{(-6)^2 - 4(1)(-25)}}{2(1)}$$

$$x = \frac{6 \pm \sqrt{36 + 100}}{2} = \frac{6 \pm \sqrt{136}}{2} = \frac{6 \pm \sqrt{4 \cdot 34}}{2} = \frac{6 \pm 2\sqrt{34}}{2}$$

$$x = \frac{6}{2} \pm \frac{2\sqrt{34}}{2}$$

$$\boxed{x = 3 \pm \sqrt{34}}$$

Solve for  $x$ , in simplest radical form.

$$3.) \quad x+3 - \frac{4}{x-1} = 5$$

$$(x-1)(x+3) - \frac{(x-1)4}{x-1} = 5(x-1)$$

$$x^2 + 3x - x - 3$$

$$x^2 + 2x - 3 - 4 = 5x - 5$$

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

$$x^2 - 3x - 2 = 0$$

$$x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$$

$$x = \frac{3 \pm \sqrt{(-3)^2 - 4(1)(-2)}}{2(1)}$$

$$x = \frac{3 \pm \sqrt{9+8}}{2}$$

$$x = \frac{3 \pm \sqrt{17}}{2}$$