



$$\sqrt{n^2} = \sqrt{34}$$

$$n = \pm 5.831$$

How do I use the quadratic formula?

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

$$ax^2 + bx + c = 0$$

Solve:  $x^2 - 9x = 20$

$$|x^2 - 9x - 20 = 0$$

$$a = 1$$

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

$$b = -9$$

$$c = -20$$

$$x = \frac{9 \pm \sqrt{81 - 4 \cdot 1 \cdot -20}}{2 \cdot 1}$$

$$X = \frac{9 \pm \sqrt{161}}{2}$$

$$\frac{9 + \sqrt{161}}{2}, \quad \frac{9 - \sqrt{161}}{2}$$

$$10.844$$

$$-1.844$$

Ex.  $15x^2 + 5x = 12 + 6x^2$   
Solve using Quad. Formula

$$9x^2 + 5x = 12$$

$$\begin{array}{r} -12 \\ -12 \end{array}$$

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$$9x^2 + 5x - 12 = 0$$

$$\begin{aligned} a &= 9 \\ b &= 5 \\ c &= -12 \end{aligned}$$

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

$$x = \frac{-5 \pm \sqrt{25 - 4 \cdot 9 \cdot -12}}{2 \cdot 9}$$

$$x = \frac{-5 \pm \sqrt{457}}{18}$$

$$\frac{-5 + \sqrt{457}}{18}$$

$$0.90986,$$

$$\frac{-5 - \sqrt{457}}{18}$$

$$-1.465$$

Solve by factoring

$$\textcircled{1} \quad x^2 + 3 = 4x$$

$$x^2 - 4x + 3 = 0$$

$$(x-3)(x-1) = 0$$

$$x-3=0$$

$$x=3$$

$$x-1=0$$

$$x=1$$

Solve by taking square roots.

$$\textcircled{2} \quad 9x^2 + 10 = 325$$

$-10 \quad -10$

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isolate  $x^2$

$$\frac{9x^2}{9} = \frac{315}{9}$$

$$\sqrt{x^2} = \sqrt{35}$$

$$x = 5.916, -5.916$$

$$\textcircled{1} \quad x^2 + 6 = 5x$$

$$\xleftarrow{\hspace{1.5cm}} x^2 - 5x + 6 = 0$$

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

$$x-2=0$$

$$x=2$$

$$x-3=0$$

$$x=3$$

$$\textcircled{5} \quad 7v^2 + 168 = -70v$$

$$\xleftarrow{\hspace{1.5cm}} \frac{7v^2 + 70v + 168}{7} = 0$$

$$v^2 + 10v + 24 = 0$$

$$(v+6)(v+4) = 0$$

$$V + 6 = 0$$
$$V = -6$$

$$V + 4 = 0$$
$$V = -4$$

Quadratic Formula

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

$$ax^2 + bx + c = 0$$

Solve by using quadratic formula.

$$x^2 + 6 = 5x$$

1<sup>st</sup>  $\rightarrow$  eqn = 0.

$$1x^2 - 5x + 6 = 0$$

$$a = 1 \quad b = -5 \quad c = 6$$



$$X = \frac{5 \pm \sqrt{25 - 4(1)(6)}}{2 \cdot 1}$$

$$X = \frac{5 \pm 1}{2}$$

$$\frac{5+1}{2}, \quad \frac{5-1}{2}$$

$$\{3, 2\}$$

Ex. Solve QF:

$$\begin{array}{r} 7k^2 - 6k + 4 = -9k + 11 \\ +9k \qquad \qquad \qquad +9k \end{array}$$

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$$\begin{array}{r} 7k^2 + 3k + 4 = 11 \\ -11 \qquad -11 \end{array}$$

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$$7k^2 + 3k - 7 = 0$$

$$\begin{array}{l} a=7 \\ b=3 \\ c=-7 \end{array}$$

$$k = \frac{-3 \pm \sqrt{9 - 4 \cdot 7 \cdot -7}}{2 \cdot 7}$$

$$k = \frac{-3 \pm \sqrt{205}}{14}$$

$$\frac{-3 + \sqrt{205}}{14}$$

$$), \quad \frac{-3 - \sqrt{205}}{14}$$

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$\{0.808, -1.236\}$

$1 \rightarrow \text{odds}$