

$$5 = 3x^2 - 7x$$

$$3x^2 - 7x - 5 = 0$$

$$\frac{-(-7) \pm \sqrt{(-7)^2 - 4(3)(-5)}}{2(3)}$$

$$\frac{7 \pm \sqrt{49 + 60}}{6}$$

$$\frac{7 \pm \sqrt{109}}{6} = \frac{7}{6} \pm \frac{\sqrt{109}}{6}$$

Little mistakes

$$x = 2 \pm \sqrt{2}$$

$$x = \frac{7}{6} \pm \frac{i\sqrt{11}}{6}$$

$$x = \frac{7}{6} \pm \frac{\sqrt{109}}{6}$$

- FACTOR
- complete square
- quad. formula

$$5x - 12 = 3x^2$$

$$3x^2 - 5x + 12 = 0$$

$$\frac{-(-5) \pm \sqrt{(-5)^2 - 4(3)(12)}}{2(3)}$$

$$\frac{5 \pm \sqrt{25 - 144}}{6}$$

$$\frac{5 \pm \sqrt{-119}}{6}$$

$$\Rightarrow \frac{5 \pm i\sqrt{119}}{6}$$

Imaginary

what step shows if your answer is real or imaginary?

Real or imaginary

Discriminant

Real

Imaginary

$$i \Rightarrow \sqrt{-1}$$

$$\boxed{x^2 + 10x} - 3 = 0$$

$$(x^2 + 10x + \underbrace{25}_{(-b/2a)^2}) - 3 - 25 = 0 \quad \text{Remember}$$

$$(x + 5)^2 - 28 = 0 \quad \left(\frac{-b}{2a}\right)^2$$

$$\begin{array}{r} \phantom{\sqrt{(x+5)^2}} \quad \quad \quad \xrightarrow{+28} \quad \quad \quad +28 \\ \hline \sqrt{(x+5)^2} = \pm \sqrt{28} \end{array}$$

$$x + 5 = \pm \sqrt{28} \quad \leftarrow \sqrt{28}$$

$$x \textcircled{+5} = \pm 2\sqrt{7}$$

$$\begin{array}{r} \phantom{x} \quad \quad \quad \xrightarrow{-5} \quad \quad \quad -5 \\ \hline x = -5 \pm 2\sqrt{7} \end{array}$$

$$\begin{array}{r} \sqrt{28} \\ \swarrow \quad \searrow \\ \sqrt{4} \cdot \sqrt{7} \\ 2\sqrt{7} \end{array}$$

$$(4x^2 + 24x) - 3 = 0$$

$$4(x^2 + 6x) - 3 = 0$$

$$4\left(x^2 + 6x + \frac{9}{3 \cdot 3}\right) - 3 - \frac{9}{3 \cdot 3} = 0$$

$$4(x + 3)^2 - 12 = 0$$

$$4(x + 3)^2 = 12$$

$$\sqrt{(x + 3)^2} = \sqrt{3}$$

$$x + 3 = \pm \sqrt{3}$$

$$x = -3 \pm \sqrt{3}$$

1

2

3

4

5

$$(2x + 1)(x + 5)$$

$$2x^2 + 11x + 5$$

$1 + 10 = 11$

$\underline{1} \cdot \underline{10}$

$$(2x + 1)(2x + 10)$$

$$(2x + 1)(x + 5)$$

$$-20x^2 + 8x - 13 = 0$$

$$\frac{-(\quad) \pm \sqrt{(\quad)^2 - 4(\quad)(\quad)}}{2(\quad)}$$