

What is the  
QUADRATIC FORMULA?

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Example 1:

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Example 2:

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Example 3:

The quadratic formula is another method for solving a quadratic equation. BE SURE the equation is written in standard form:

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

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

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Example 1: use the quadratic formula to solve the equation. round your answer to the nearest hundredth, if necessary.

$$2x^2 + 7x - 9 = 0$$

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Example 2: use the quadratic formula to solve the equation. round your answer to the nearest hundredth, if necessary.

$$4m^2 = 7m + 2$$

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Example 3: use the quadratic formula to solve the equation. round your answer to the nearest hundredth, if necessary.

$$5w^2 + 4 = w + 6$$

THE QUADRATIC FORMULA

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Example 1:

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Example 2:

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Example 3:

The QUADRATIC FORMULA is another method FOR SOLVING a QUADRATIC EQUATION. BE SURE the EQUATION IS WRITTEN IN STANDARD FORM:

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

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

Example 1: use the QUADRATIC FORMULA to SOLVE the EQUATION. ROUND YOUR ANSWER to the NEAREST HUNDREDTH, IF NECESSARY.

$$2x^2 + 7x - 9 = 0$$

$$a=2 \quad b=7 \quad c=-9$$

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

$$x = \frac{-7 \pm \sqrt{7^2 - 4(2)(-9)}}{2(2)}$$

$$x = \frac{-7 \pm \sqrt{121}}{4}$$

$$x = \frac{-7 \pm 11}{4}$$

$$x = \frac{-7+11}{4} = 1$$

$$x = \frac{-7-11}{4} = \frac{-18}{4} = -4.5$$

Example 2: use the QUADRATIC FORMULA to SOLVE the EQUATION. ROUND YOUR ANSWER to the NEAREST HUNDREDTH, IF NECESSARY.

$$4m^2 = 7m + 2$$

$$\begin{array}{r} -7m \quad -2 \\ -7m \quad -2 \\ \hline \end{array}$$

$$4m^2 - 7m - 2 = 0$$

$$a=4 \quad b=-7 \quad c=-2$$

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

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

$$x = \frac{7 \pm \sqrt{49 + 32}}{8}$$

$$x = \frac{7 \pm 9}{8}$$

$$x = \frac{7+9}{8} = 2$$

$$x = \frac{7-9}{8} = -0.25$$

Example 3: use the QUADRATIC FORMULA to SOLVE the EQUATION. ROUND YOUR ANSWER to the NEAREST HUNDREDTH, IF NECESSARY.

$$5w^2 + 4 = w + 6$$

$$\begin{array}{r} -w \quad -6 \\ -w \quad -6 \\ \hline \end{array}$$

$$5w^2 - w - 2 = 0$$

$$a=5 \quad b=-1 \quad c=-2$$

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

$$x = \frac{1 \pm \sqrt{(-1)^2 - 4(5)(-2)}}{2(5)}$$

$$x = \frac{1 \pm \sqrt{41}}{10}$$

$$x = \frac{1 \pm 6.403}{10}$$

$$x = \frac{1+6.403}{10} = 0.74$$

$$x = \frac{1-6.403}{10} = -0.54$$

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