Algebra II
Lesson #5 Unit 6
Class Worksheet #5
For Worksheet #6

The Quadratic Formula

The Quadratic Formula

Solving Second Degree Equations With 1 Variable

$$Ax^2 + Bx + C = 0 \quad \text{where } A \neq 0.$$

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$$Ax^2 + Bx + C = 0 \text{ where } A \neq 0.$$

You have learned three different ways to solve second degree equations (also called quadratic equations) with one variable. The first was the factoring method. This is a very effective way of solving these equations.

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You have learned three different ways to solve second degree equations (also called quadratic equations) with one variable. The first was the factoring method. This is a very effective way of solving these equations. However, it only 'works' if the expression $Ax^2 + Bx + C$ is factorable.

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This is a quadratic equation written in standard form. The 'complete the square' process can be used to solve for x in terms of a, b, and c.

Subtract c from both sides.

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Write the trinomial in 'factored form'. $(x + A)^2$

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Write the trinomial in 'factored form'. $(x + A)^2$

The Quadratic Formula

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

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

$$x^2 + \frac{b}{a}x = \frac{-c}{a}$$

$$x^2 + \frac{b}{a}x + \frac{b^2}{4a^2} = \frac{b^2}{4a^2} + \frac{-c}{a}$$

$$\left(x + \frac{b}{2a}\right)^2 = \frac{b^2}{4a^2}$$

This is a quadratic equation written in standard form. The 'complete the square' process can be used to solve for x in terms of a, b, and c.

$$x^2 + 2Ax + A^2 = (x + A)^2$$

$$2A = \frac{b}{a}$$

$$A = \frac{b}{2a}$$

$$A^2 = \frac{b^2}{4a^2}$$

Add $\frac{b^2}{4a^2}$ to both sides.

Step 2 : Complete the square. Write the equation in the form $(x + A)^2 = k$.

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$$(x + \frac{b}{2a})^2 = \frac{b^2 - 4ac}{4a^2}$$

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This is a quadratic equation written in standard form. The 'complete the square' process can be used to solve for x in terms of a, b, and c.

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

Step 5 : Express the solutions in 'best from'.

The Quadratic Formula

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The quadratic formula can be used to solve any second degree equation.

The Quadratic Formula

If $ax^2 + bx + c = 0$, then

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The quadratic formula can be used to solve any second degree equation. The purpose of the remainder of this lesson is to demonstrate how to use it.

Algebra II   Class Worksheet   #5   Unit 6

Algebra II   Class Worksheet   #5   Unit 6

Solve each of the following using the quadratic formula.

1. $x^2 - 3x - 5 = 0$

Algebra II   Class Worksheet   #5   Unit 6

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Algebra II Class Worksheet #5 Unit 6

Solve each of the following using the quadratic formula.

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If $ax^2 + bx + c = 0$, then $x = \dfrac{-b \pm \sqrt{b^2 - 4ac}}{2a}$

Algebra II   Class Worksheet   #5   Unit 6

Solve each of the following using the quadratic formula.

1. $x^2 - 3x - 5 = 0$

Step 1: Identify the values of a, b, and c.

The Quadratic Formula

If $ax^2 + bx + c = 0$, then $x = \dfrac{-b \pm \sqrt{b^2 - 4ac}}{2a}$

Algebra II   Class Worksheet   #5   Unit 6

Solve each of the following using the quadratic formula.

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If $ax^2 + bx + c = 0$, then $x = \dfrac{-b \pm \sqrt{b^2 - 4ac}}{2a}$

Algebra II Class Worksheet #5 Unit 6

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The Quadratic Formula

If $ax^2 + bx + c = 0$, then $x = \dfrac{-b \pm \sqrt{b^2 - 4ac}}{2a}$

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Solve each of the following using the quadratic formula.

1. $1x^2 - 3x - 5 = 0$

    $a =$

Step 1: Identify the values of a, b, and c.

The Quadratic Formula

If $ax^2 + bx + c = 0$, then $x = \dfrac{-b \pm \sqrt{b^2 - 4ac}}{2a}$

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a = 1

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Algebra II Class Worksheet #5 Unit 6

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Algebra II   Class Worksheet   #5   Unit 6

Solve each of the following using the quadratic formula.

1. $x^2 - 3x - 5 = 0$

$$a = 1 \quad b = -3 \quad c = -5$$

$$x = \frac{3}{\rule{4cm}{0.4pt}}$$

Step 1: Identify the values of a, b, and c.

Step 2 : Substitute the value of a, b, and c into the <u>quadratic formula</u>.

The Quadratic Formula

If $ax^2 + bx + c = 0$, then $x = \dfrac{-b \pm \sqrt{b^2 - 4ac}}{2a}$

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a = 1   b = -3   c = -5

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

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a = 1   b = -3   c = -5

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

Step 1: Identify the values of a, b, and c.

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Algebra II   Class Worksheet   #5   Unit 6

Solve each of the following using the quadratic formula.

1. $x^2 - 3x - 5 = 0$

$a = 1$ $b = -3$ $c = -5$

$$x = \frac{3 \pm \sqrt{9}}{}$$

Step 1: Identify the values of a, b, and c.

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The Quadratic Formula

If $ax^2 + bx + c = 0$, then $x = \dfrac{-b \pm \sqrt{b^2 - 4ac}}{2a}$

Algebra II Class Worksheet #5 Unit 6

Solve each of the following using the quadratic formula.

1. $x^2 - 3x - 5 = 0$

$a = 1$ $b = -3$ $c = -5$

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Step 1: Identify the values of a, b, and c.

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Solve each of the following using the quadratic formula.

1. $x^2 - 3x - 5 = 0$

$a = 1$ $b = -3$ $c = -5$

$$x = \frac{3 \pm \sqrt{9 - (4)(1)(-5)}}{}$$

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Step 1: Identify the values of a, b, and c.

Step 2 : Substitute the value of a, b, and c into the <u>quadratic formula</u>.

Step 3 : Evaluate the discriminant: $b^2 - 4ac$.

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1. $x^2 - 3x - 5 = 0$

a = 1   b = -3   c = -5

$$x = \frac{3 \pm \sqrt{9 - (4)(1)(-5)}}{2} =$$

Step 1: Identify the values of a, b, and c.

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$$a = 1 \quad b = -3 \quad c = -5$$

$$x = \frac{3 \pm \sqrt{9 - (4)(1)(-5)}}{2} = \frac{3 \pm}{}$$

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The Quadratic Formula

If $ax^2 + bx + c = 0$, then $x = \dfrac{-b \pm \sqrt{b^2 - 4ac}}{2a}$

Algebra II   Class Worksheet   #5   Unit 6

Solve each of the following using the quadratic formula.

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Step 1: Identify the values of a, b, and c.

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If ax² + bx + c = 0, then   x = $\dfrac{-b \pm \sqrt{b^2 - 4ac}}{2a}$

Algebra II   Class Worksheet   #5   Unit 6

Solve each of the following using the quadratic formula.

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

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Solve each of the following using the quadratic formula.

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

a = 1   b = -5   c = 6

$$x = \frac{5}{\rule{4cm}{0.4pt}}$$

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Algebra II Class Worksheet #5 Unit 6

Solve each of the following using the quadratic formula.

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

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

$$x = \frac{5}{\rule{3cm}{0.4pt}}$$

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Algebra II   Class Worksheet   #5   Unit 6

Solve each of the following using the quadratic formula.

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

a = 1   b = -5   c = 6

$$x = \frac{5 \pm \sqrt{25}}{}$$

Step 1: Identify the values of a, b, and c.

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Step 3 : Evaluate the discriminant: $b^2 - 4ac$.

Step 4 : Express the solutions in 'best from'.

The Quadratic Formula

If $ax^2 + bx + c = 0$, then $x = \dfrac{-b \pm \sqrt{b^2 - 4ac}}{2a}$

Algebra II   Class Worksheet   #5   Unit 6

Solve each of the following using the quadratic formula.

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

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

$$x = \frac{5 \pm \sqrt{25}}{}$$

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Step 4 : Express the solutions in 'best from'.

The Quadratic Formula

If $ax^2 + bx + c = 0$, then $x = \dfrac{-b \pm \sqrt{b^2 - 4ac}}{2a}$

Algebra II   Class Worksheet   #5   Unit 6

Solve each of the following using the quadratic formula.

3. $x^2 + 4x + 6 = 0$

Step 1: Identify the values of a, b, and c.

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The Quadratic Formula

If ax² + bx + c = 0, then   x = $\dfrac{\text{-b} \pm \sqrt{b^2 - 4ac}}{2a}$

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3. $x^2 + 4x + 6 = 0$

   a =

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The Quadratic Formula

If $ax^2 + bx + c = 0$, then $x = \dfrac{-b \pm \sqrt{b^2 - 4ac}}{2a}$

Algebra II   Class Worksheet   #5   Unit 6

Solve each of the following using the quadratic formula.

3. $1x^2 + 4x + 6 = 0$

a =

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Step 2 : Substitute the value of a, b, and c into the <u>quadratic formula</u>.

Step 3 : Evaluate the discriminant: b² – 4ac.

Step 4 : Express the solutions in 'best from'.

The Quadratic Formula

If ax² + bx + c = 0, then $x = \dfrac{-b \pm \sqrt{b^2 - 4ac}}{2a}$

Algebra II   Class Worksheet   #5   Unit 6

Solve each of the following using the quadratic formula.

3. $1x^2 + 4x + 6 = 0$

a = 1

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The Quadratic Formula

If $ax^2 + bx + c = 0$, then $x = \dfrac{-b \pm \sqrt{b^2 - 4ac}}{2a}$

Algebra II   Class Worksheet   #5   Unit 6

Solve each of the following using the quadratic formula.

3. $x^2 + 4x + 6 = 0$

$a = 1$

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Algebra II Class Worksheet #5 Unit 6

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$a = 1 \quad b = 4$

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Algebra II Class Worksheet #5 Unit 6

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3. $x^2 + 4x + 6 = 0$

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Algebra II Class Worksheet #5 Unit 6

Solve each of the following using the quadratic formula.

3. $x^2 + 4x + 6 = 0$

$a = 1$ $b = 4$ $c = 6$

$$x = \dfrac{-4}{\rule{3cm}{0.4pt}}$$

Step 1: Identify the values of a, b, and c.

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$a = 1$ $b = 4$ $c = 6$

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

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3. $x^2 + 4x + 6 = 0$

$a = 1$ $b = 4$ $c = 6$

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

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Algebra II   Class Worksheet   #5   Unit 6

Solve each of the following using the quadratic formula.

3. $x^2 + 4x + 6 = 0$

$a = 1$ $b = 4$ $c = 6$

$$x = \frac{-4 \pm \sqrt{16}}{}$$

Step 1: Identify the values of a, b, and c.

Step 2 : Substitute the value of a, b, and c into the <u>quadratic formula</u>.

Step 3 : Evaluate the discriminant: b² – 4ac.

Step 4 : Express the solutions in 'best from'.

The Quadratic Formula

If $ax^2 + bx + c = 0$, then $x = \dfrac{-b \pm \sqrt{b^2 - 4ac}}{2a}$

Algebra II   Class Worksheet   #5   Unit 6

Solve each of the following using the quadratic formula.

3. $x^2 + 4x + 6 = 0$

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$$x = \frac{-4 \pm \sqrt{16}}{}$$

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Solve each of the following using the quadratic formula.

3. $x^2 + 4x + 6 = 0$

$$a = 1 \quad b = 4 \quad c = 6$$

$$x = \frac{-4 \pm \sqrt{16 - (4)(1)(6)}}{}$$

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Step 2 : Substitute the value of a, b, and c into the <u>quadratic formula</u>.

Step 3 : Evaluate the discriminant: $b^2 - 4ac$.

Step 4 : Express the solutions in 'best from'.

The Quadratic Formula

If $ax^2 + bx + c = 0$, then $x = \dfrac{-b \pm \sqrt{b^2 - 4ac}}{2a}$

Algebra II   Class Worksheet   #5   Unit 6

Solve each of the following using the quadratic formula.

3. $x^2 + 4x + 6 = 0$

$$a = 1 \quad b = 4 \quad c = 6$$

$$x = \frac{-4 \pm \sqrt{16 - (4)(1)(6)}}{2} = \frac{-4 \pm \sqrt{-8}}{2}$$

Step 1: Identify the values of a, b, and c.

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Algebra II   Class Worksheet   #5   Unit 6

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$$x = \frac{-4 \pm \sqrt{16 - (4)(1)(6)}}{2} = \frac{-4 \pm \sqrt{-8}}{2}$$

Step 1: Identify the values of a, b, and c.

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$$x = \frac{-4 \pm \underline{}}{}$$

Step 1: Identify the values of a, b, and c.

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If $ax^2 + bx + c = 0$, then $x = \dfrac{-b \pm \sqrt{b^2 - 4ac}}{2a}$

Algebra II   Class Worksheet   #5   Unit 6

Solve each of the following using the quadratic formula.

3. $x^2 + 4x + 6 = 0$

$a = 1$ $b = 4$ $c = 6$

$$X = \frac{-4 \pm \sqrt{16 - (4)(1)(6)}}{2} = \frac{-4 \pm \sqrt{-8}}{2}$$

$$X = \frac{-4 \pm 2\sqrt{2}\ i}{}$$

Step 1: Identify the values of a, b, and c.

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The Quadratic Formula

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Algebra II   Class Worksheet   #5   Unit 6

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$$x = \frac{-4 \pm 2\sqrt{2}\ i}{2} = -2$$

Step 1: Identify the values of a, b, and c.

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The Quadratic Formula

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Algebra II   Class Worksheet   #5   Unit 6

Solve each of the following using the quadratic formula.

3. $x^2 + 4x + 6 = 0$

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$$x = -2 + \sqrt{2}\ i$$

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Algebra II Class Worksheet #5 Unit 6

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Algebra II   Class Worksheet   #5   Unit 6

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$$x = -2 + \sqrt{2}\, i \quad \text{or} \quad x = -2 - \sqrt{2}\, i$$

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Algebra II   Class Worksheet   #5   Unit 6

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The Quadratic Formula

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Algebra II   Class Worksheet   #5   Unit 6

Solve each of the following using the quadratic formula.

$$4. \quad x^2 + 6x + 9 = 0$$

Step 1: Identify the values of a, b, and c.

Step 2 : Substitute the value of a, b, and c into the <u>quadratic formula</u>.

Step 3 : Evaluate the discriminant: b² – 4ac.

Step 4 : Express the solutions in 'best from'.

The Quadratic Formula

If ax² + bx + c = 0, then   x = $\dfrac{\text{-b} \pm \sqrt{b^2 - 4ac}}{2a}$

Algebra II   Class Worksheet   #5   Unit 6

Solve each of the following using the quadratic formula.

4. $x^2 + 6x + 9 = 0$

Step 1: Identify the values of a, b, and c.

Step 2 : Substitute the value of a, b, and c into the <u>quadratic formula</u>.

Step 3 : Evaluate the discriminant: $b^2 - 4ac$.

Step 4 : Express the solutions in 'best from'.

The Quadratic Formula

If $ax^2 + bx + c = 0$, then $x = \dfrac{-b \pm \sqrt{b^2 - 4ac}}{2a}$

Algebra II   Class Worksheet   #5   Unit 6

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The Quadratic Formula

If $ax^2 + bx + c = 0$, then $x = \dfrac{-b \pm \sqrt{b^2 - 4ac}}{2a}$

Algebra II   Class Worksheet   #5   Unit 6

Solve each of the following using the quadratic formula.

4. $x^2 + 6x + 9 = 0$

a =

Step 1: Identify the values of a, b, and c.

Step 2 : Substitute the value of a, b, and c into the <u>quadratic formula</u>.

Step 3 : Evaluate the discriminant: $b^2 - 4ac$.

Step 4 : Express the solutions in 'best from'.

The Quadratic Formula

If $ax^2 + bx + c = 0$, then $x = \dfrac{-b \pm \sqrt{b^2 - 4ac}}{2a}$

Algebra II   Class Worksheet   #5   Unit 6

Solve each of the following using the quadratic formula.

4. $x^2 + 6x + 9 = 0$

a =

Step 1: Identify the values of a, b, and c.

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The Quadratic Formula

If $ax^2 + bx + c = 0$, then $x = \dfrac{-b \pm \sqrt{b^2 - 4ac}}{2a}$

Algebra II   Class Worksheet   #5   Unit 6

Solve each of the following using the quadratic formula.

4. $1x^2 + 6x + 9 = 0$

a =

Step 1: Identify the values of a, b, and c.

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Step 3 : Evaluate the discriminant: $b^2 - 4ac$.

Step 4 : Express the solutions in 'best from'.

The Quadratic Formula

If $ax^2 + bx + c = 0$, then $x = \dfrac{-b \pm \sqrt{b^2 - 4ac}}{2a}$

Algebra II   Class Worksheet   #5   Unit 6

Solve each of the following using the quadratic formula.

4. $1x^2 + 6x + 9 = 0$

$a = 1$

Step 1: Identify the values of a, b, and c.

Step 2 : Substitute the value of a, b, and c into the <u>quadratic formula</u>.

Step 3 : Evaluate the discriminant: $b^2 - 4ac$.

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The Quadratic Formula

If $ax^2 + bx + c = 0$, then $x = \dfrac{-b \pm \sqrt{b^2 - 4ac}}{2a}$

Algebra II   Class Worksheet   #5   Unit 6

Solve each of the following using the quadratic formula.

4. $x^2 + 6x + 9 = 0$

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The Quadratic Formula

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Algebra II   Class Worksheet   #5   Unit 6

Solve each of the following using the quadratic formula.

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$a = 1$ $b =$

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Algebra II Class Worksheet #5 Unit 6

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$a = 1$ $b =$

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Algebra II   Class Worksheet   #5   Unit 6

Solve each of the following using the quadratic formula.

4. $x^2 + 6x + 9 = 0$

a = 1   b =

Step 1: Identify the values of a, b, and c.

Step 2 : Substitute the value of a, b, and c into the <u>quadratic formula</u>.

Step 3 : Evaluate the discriminant: b² – 4ac.

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The Quadratic Formula

If ax² + bx + c = 0, then   x = $\dfrac{-b \pm \sqrt{b^2 - 4ac}}{2a}$

Algebra II Class Worksheet #5 Unit 6

Solve each of the following using the quadratic formula.

4. $x^2 + 6x + 9 = 0$

a = 1   b = 6

Step 1: Identify the values of a, b, and c.

Step 2 : Substitute the value of a, b, and c into the <u>quadratic formula</u>.

Step 3 : Evaluate the discriminant: b² – 4ac.

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The Quadratic Formula

If $ax^2 + bx + c = 0$, then $x = \dfrac{-b \pm \sqrt{b^2 - 4ac}}{2a}$

Algebra II   Class Worksheet   #5   Unit 6

Solve each of the following using the quadratic formula.

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Step 1: Identify the values of a, b, and c.

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Algebra II   Class Worksheet   #5   Unit 6

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If $ax^2 + bx + c = 0$, then $x = \dfrac{-b \pm \sqrt{b^2 - 4ac}}{2a}$

Solve each of the following using the quadratic formula.

4. $x^2 + 6x + 9 = 0$

a = 1   b = 6   c = 9

Step 1: Identify the values of a, b, and c.

Step 2 : Substitute the value of a, b, and c into the <u>quadratic formula</u>.

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Algebra II   Class Worksheet   #5   Unit 6

Solve each of the following using the quadratic formula.

4. $x^2 + 6x + 9 = 0$

$a = 1$ $b = 6$ $c = 9$

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Algebra II Class Worksheet #5 Unit 6

Solve each of the following using the quadratic formula.

4. $x^2 + 6x + 9 = 0$

$a = 1$ $b = 6$ $c = 9$

x =

Step 1: Identify the values of a, b, and c.

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Step 4 : Express the solutions in 'best from'.

The Quadratic Formula

If $ax^2 + bx + c = 0$, then $x = \dfrac{-b \pm \sqrt{b^2 - 4ac}}{2a}$

Algebra II   Class Worksheet   #5   Unit 6

Solve each of the following using the quadratic formula.

4. $x^2 + 6x + 9 = 0$

$a = 1$ $b = 6$ $c = 9$

$x =$

Step 1: Identify the values of a, b, and c.

Step 2 : Substitute the value of a, b, and c into the <u>quadratic formula</u>.

Step 3 : Evaluate the discriminant: $b^2 - 4ac$.

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The Quadratic Formula

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Algebra II   Class Worksheet   #5   Unit 6

Solve each of the following using the quadratic formula.

4. $x^2 + 6x + 9 = 0$

$a = 1$ $b = 6$ $c = 9$

$$x = \frac{-6}{\rule{6cm}{0.4pt}}$$

Step 1: Identify the values of a, b, and c.

Step 2 : Substitute the value of a, b, and c into the <u>quadratic formula</u>.

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Algebra II   Class Worksheet   #5   Unit 6

Solve each of the following using the quadratic formula.

4. $x^2 + 6x + 9 = 0$

$a = 1$ $b = 6$ $c = 9$

$$x = \frac{-6}{\rule{4cm}{0.4pt}}$$

Step 1: Identify the values of a, b, and c.

Step 2 : Substitute the value of a, b, and c into the <u>quadratic formula</u>.

Step 3 : Evaluate the discriminant: $b^2 - 4ac$.

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The Quadratic Formula

If $ax^2 + bx + c = 0$, then $x = \dfrac{-b \pm \sqrt{b^2 - 4ac}}{2a}$

Algebra II   Class Worksheet   #5   Unit 6

Solve each of the following using the quadratic formula.

4. $x^2 + 6x + 9 = 0$

$a = 1$ $b = 6$ $c = 9$

$$x = \frac{-6 \pm \rule{3cm}{0.4pt}}{\rule{4cm}{0.4pt}}$$

Step 1: Identify the values of a, b, and c.

Step 2 : Substitute the value of a, b, and c into the <u>quadratic formula</u>.

Step 3 : Evaluate the discriminant: $b^2 - 4ac$.

Step 4 : Express the solutions in 'best from'.

The Quadratic Formula

If $ax^2 + bx + c = 0$, then $x = \dfrac{-b \pm \sqrt{b^2 - 4ac}}{2a}$

Algebra II   Class Worksheet   #5   Unit 6

Solve each of the following using the quadratic formula.

4. $x^2 + 6x + 9 = 0$

$a = 1 \quad b = 6 \quad c = 9$

$$x = \frac{-6 \pm \sqrt{}}{}$$

Step 1: Identify the values of a, b, and c.

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The Quadratic Formula

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Algebra II   Class Worksheet   #5   Unit 6

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4. $x^2 + 6x + 9 = 0$

a = 1   b = 6   c = 9

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Step 1: Identify the values of a, b, and c.

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The Quadratic Formula

If ax² + bx + c = 0, then $x = \dfrac{-b \pm \sqrt{b^2 - 4ac}}{2a}$

Algebra II   Class Worksheet   #5   Unit 6

Solve each of the following using the quadratic formula.

4. $x^2 + 6x + 9 = 0$

$$a = 1 \quad b = 6 \quad c = 9$$

$$x = \frac{-6 \pm \sqrt{36}}{}$$

Step 1: Identify the values of a, b, and c.

Step 2 : Substitute the value of a, b, and c into the <u>quadratic formula</u>.

Step 3 : Evaluate the discriminant: b² – 4ac.

Step 4 : Express the solutions in 'best from'.

The Quadratic Formula

If $ax^2 + bx + c = 0$, then $x = \dfrac{-b \pm \sqrt{b^2 - 4ac}}{2a}$

Algebra II   Class Worksheet   #5   Unit 6

Solve each of the following using the quadratic formula.

4. $x^2 + 6x + 9 = 0$

$a = 1 \quad b = 6 \quad c = 9$

$$x = \frac{-6 \pm \sqrt{36}}{}$$

Step 1: Identify the values of a, b, and c.

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Algebra II   Class Worksheet   #5   Unit 6

Solve each of the following using the quadratic formula.

4. $x^2 + 6x + 9 = 0$

$$a = 1 \quad b = 6 \quad c = 9$$

$$x = \frac{-6 \pm \sqrt{36 - }}{}$$

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Algebra II   Class Worksheet   #5   Unit 6

Solve each of the following using the quadratic formula.

4. $x^2 + 6x + 9 = 0$

$a = 1$ $b = 6$ $c = 9$

$$x = \frac{-6 \pm \sqrt{36 - (4)(1)(9)}}{}$$

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Algebra II   Class Worksheet   #5   Unit 6

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Algebra II   Class Worksheet   #5   Unit 6

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$$a = 1 \quad b = 6 \quad c = 9$$

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Algebra II   Class Worksheet   #5   Unit 6

Solve each of the following using the quadratic formula.

4. $x^2 + 6x + 9 = 0$

a = 1   b = 6   c = 9

$$x = \frac{-6 \pm \sqrt{36 - (4)(1)(9)}}{2} = \frac{-6 \pm \sqrt{0}}{2} = \frac{-6}{2}$$

x = -3

Step 1: Identify the values of a, b, and c.

Step 2 : Substitute the value of a, b, and c into the <u>quadratic formula</u>.

Step 3 : Evaluate the discriminant: b² – 4ac.

Step 4 : Express the solutions in 'best from'.

The Quadratic Formula

If $ax^2 + bx + c = 0$, then $x = \dfrac{-b \pm \sqrt{b^2 - 4ac}}{2a}$

Algebra II   Class Worksheet   #5   Unit 6

Solve each of the following using the quadratic formula.

4. $x^2 + 6x + 9 = 0$

$$a = 1 \quad b = 6 \quad c = 9$$

$$x = \frac{-6 \pm \sqrt{36 - (4)(1)(9)}}{2} = \frac{-6 \pm \sqrt{0}}{2} = \frac{-6}{2}$$

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Step 1: Identify the values of a, b, and c.

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If $ax^2 + bx + c = 0$, then $x = \dfrac{-b \pm \sqrt{b^2 - 4ac}}{2a}$

Algebra II   Class Worksheet   #5   Unit 6

Solve each of the following using the quadratic formula.

4. $x^2 + 6x + 9 = 0$

$$a = 1 \quad b = 6 \quad c = 9$$

$$x = \frac{-6 \pm \sqrt{36 - (4)(1)(9)}}{2} = \frac{-6 \pm \sqrt{0}}{2} = \frac{-6}{2}$$

$$x = -3$$

Step 1: Identify the values of a, b, and c.

Step 2 : Substitute the value of a, b, and c into the **quadratic formula**.

Step 3 : Evaluate the discriminant: $b^2 - 4ac$.

Step 4 : Express the solutions in 'best from'.

The Quadratic Formula

If $ax^2 + bx + c = 0$, then $x = \dfrac{-b \pm \sqrt{b^2 - 4ac}}{2a}$

Algebra II   Class Worksheet   #5   Unit 6

Solve each of the following using the quadratic formula.

$$4. \quad x^2 + 6x + 9 = 0$$

$$a = 1 \quad b = 6 \quad c = 9$$

$$x = \frac{-6 \pm \sqrt{36 - (4)(1)(9)}}{2} = \frac{-6 \pm \sqrt{0}}{2} = \frac{-6}{2}$$

$$x = -3$$

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Step 3 : Evaluate the discriminant: $b^2 - 4ac$.

Step 4 : Express the solutions in 'best from'.

The Quadratic Formula

If $ax^2 + bx + c = 0$, then $\quad x = \dfrac{-b \pm \sqrt{b^2 - 4ac}}{2a}$

Algebra II   Class Worksheet   #5   Unit 6

Solve each of the following using the quadratic formula.

$$5. \quad 3x^2 + 2x - 3 = 0$$

Step 1: Identify the values of a, b, and c.

Step 2 : Substitute the value of a, b, and c into the <u>quadratic formula</u>.

Step 3 : Evaluate the discriminant: b² – 4ac.

Step 4 : Express the solutions in 'best from'.

The Quadratic Formula

If ax² + bx + c = 0, then $x = \dfrac{-b \pm \sqrt{b^2 - 4ac}}{2a}$

Algebra II   Class Worksheet   #5   Unit 6

Solve each of the following using the quadratic formula.

$$5. \quad 3x^2 + 2x - 3 = 0$$

Step 1: Identify the values of a, b, and c.

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If $ax^2 + bx + c = 0$, then $x = \dfrac{-b \pm \sqrt{b^2 - 4ac}}{2a}$

Algebra II   Class Worksheet   #5   Unit 6

Solve each of the following using the quadratic formula.

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

Step 1: Identify the values of a, b, and c.

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The Quadratic Formula

If $ax^2 + bx + c = 0$, then $x = \dfrac{-b \pm \sqrt{b^2 - 4ac}}{2a}$

Algebra II Class Worksheet #5 Unit 6

Solve each of the following using the quadratic formula.

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

a =

Step 1: Identify the values of a, b, and c.

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Algebra II   Class Worksheet   #5   Unit 6

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If $ax^2 + bx + c = 0$, then $x = \dfrac{-b \pm \sqrt{b^2 - 4ac}}{2a}$

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$$x = \frac{-2}{\rule{4cm}{0.4pt}}$$

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$$a = 3 \quad b = 2 \quad c = -3$$

$$x = \frac{-2 \pm \sqrt{4 - (4)(3)(-3)}}{6} = \frac{-2 \pm \sqrt{40}}{6} = \frac{-2 \pm 2\sqrt{10}}{6}$$

$$x = \frac{-1 + \sqrt{10}}{3}$$

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The Quadratic Formula

If $ax^2 + bx + c = 0$, then $x = \dfrac{-b \pm \sqrt{b^2 - 4ac}}{2a}$

Algebra II   Class Worksheet   #5   Unit 6

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The Quadratic Formula

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Solve each of the following using the quadratic formula.

$$7. \quad 3x^2 + 2x + 2 = 0$$

Step 1: Identify the values of a, b, and c.

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The Quadratic Formula

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Step 3 : Evaluate the discriminant: $b^2 - 4ac$.

Step 4 : Express the solutions in 'best from'.

The Quadratic Formula

If $ax^2 + bx + c = 0$, then $x = \dfrac{-b \pm \sqrt{b^2 - 4ac}}{2a}$

Algebra II   Class Worksheet   #5   Unit 6

Solve each of the following using the quadratic formula.

7. $3x^2 + 2x + 2 = 0$

a = 3

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Solve each of the following using the quadratic formula.

7. $3x^2 + 2x + 2 = 0$

a = 3   b = 2   c = 2

x =

Step 1: Identify the values of a, b, and c.

Step 2 : Substitute the value of a, b, and c into the <u>quadratic formula</u>.

Step 3 : Evaluate the discriminant: b² – 4ac.

Step 4 : Express the solutions in 'best from'.

The Quadratic Formula

If ax² + bx + c = 0, then   x = $\dfrac{-b \pm \sqrt{b^2 - 4ac}}{2a}$

Algebra II   Class Worksheet   #5   Unit 6

Solve each of the following using the quadratic formula.

7. $3x^2 + 2x + 2 = 0$

$$a = 3 \quad b = 2 \quad c = 2$$

$$x = \frac{-2}{\rule{6cm}{0.4pt}}$$

Step 1: Identify the values of a, b, and c.

Step 2 : Substitute the value of a, b, and c into the <u>quadratic formula</u>.

Step 3 : Evaluate the discriminant: b² – 4ac.

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The Quadratic Formula

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Algebra II   Class Worksheet   #5   Unit 6

Solve each of the following using the quadratic formula.

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$a = 3 \quad b = 2 \quad c = 2$

$$x = \dfrac{-2}{}$$

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The Quadratic Formula

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Algebra II Class Worksheet #5 Unit 6

Solve each of the following using the quadratic formula.

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a = 3   b = 2   c = 2

$$x = \frac{-2 \pm }{}$$

Step 1: Identify the values of a, b, and c.

Step 2 : Substitute the value of a, b, and c into the <u>quadratic formula</u>.

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If ax² + bx + c = 0, then $x = \dfrac{-b \pm \sqrt{b^2 - 4ac}}{2a}$

Algebra II   Class Worksheet   #5   Unit 6

Solve each of the following using the quadratic formula.

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$$a = 3 \quad b = 2 \quad c = 2$$

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Algebra II   Class Worksheet   #5   Unit 6

Solve each of the following using the quadratic formula.

7. $3x^2 + 2x + 2 = 0$

$a = 3$ $b = 2$ $c = 2$

$$x = \frac{-2 \pm \sqrt{4}}{}$$

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Step 2 : Substitute the value of a, b, and c into the <u>quadratic formula</u>.

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The Quadratic Formula

If $ax^2 + bx + c = 0$, then $x = \dfrac{-b \pm \sqrt{b^2 - 4ac}}{2a}$

Algebra II   Class Worksheet   #5   Unit 6

Solve each of the following using the quadratic formula.

7. $3x^2 + 2x + 2 = 0$

$a = 3$ $b = 2$ $c = 2$

$$x = \frac{-2 \pm \sqrt{4}}{}$$

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$a = 3$ $b = 2$ $c = 2$

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

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Solve each of the following using the quadratic formula.

7. $3x^2 + 2x + 2 = 0$

a = 3   b = 2   c = 2

$$x = \frac{-2 \pm \sqrt{4 - (4)(3)(2)}}{6}$$

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Step 2 : Substitute the value of a, b, and c into the <u>quadratic formula</u>.

Step 3 : Evaluate the discriminant: b² – 4ac.

Step 4 : Express the solutions in 'best from'.

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Algebra II   Class Worksheet   #5   Unit 6

Solve each of the following using the quadratic formula.

7. $3x^2 + 2x + 2 = 0$

$$a = 3 \quad b = 2 \quad c = 2$$

$$x = \frac{-2 \pm \sqrt{4 - (4)(3)(2)}}{6} = \frac{-2 \pm \sqrt{-20}}{6}$$

$$x = \frac{-2 \pm 2\sqrt{5}\,i}{6}$$

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$$a = 9 \quad b = -12 \quad c = 4$$

$$x = \frac{12 \rule{4cm}{0.4pt}}{\rule{5cm}{0.4pt}}$$

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