Algebra II
Lesson #4 Unit 6
Class Worksheet #4
For Worksheet #5

Complete the Square

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Consider the following problems.

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$(x + 5)^2 =$

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$(x + 5)^2 =$

$= (x + 5)(x + 5)$

Complete the Square

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$(x + 5)^2 =$

$= (x + 5)(x + 5) =$

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Consider the following problems.

$(x + 5)^2 =$

$= (x + 5)(x + 5) = x^2$

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$(x + 5)^2 =$

$= (x + 5)(x + 5) = x^2 + 5x$

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$(x + 5)^2 =$

$= (x + 5)(x + 5) = x^2 + 5x$

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Consider the following problems.

$$(x + 5)^2 =$$

$$= (x + 5)(x + 5) = x^2 + 5x + 5x$$

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$(x + 5)^2 =$

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Consider the following problems.

$(x + 5)^2 =$

$= (x + 5)(x + 5) = x^2 + 5x + 5x + 25$

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$$(x + 5)^2 =$$

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$(x + 5)^2 = \;\; x^2$

$= (x + 5)(x + 5) = x^2 + 5x + 5x + 25 =$

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$(x + 5)^2 = x^2$

$= (x + 5)(x + 5) = x^2 + 5x + 5x + 25 =$

Complete the Square

Consider the following problems.

$(x + 5)^2 = \ x^2 + 10x$

$= (x + 5)(x + 5) = x^2 + 5x + 5x + 25 =$

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$$(x + 5)^2 = \ x^2 + 10x$$

$$= (x + 5)(x + 5) = x^2 + 5x + 5x + 25 =$$

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$(x + 5)^2 = x^2 + 10x + 25$

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$(x + 5)^2 = \; x^2 + 10x + 25$

$(x + A)^2 =$

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$$(x + 5)^2 = x^2 + 10x + 25$$

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

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$(x + A)^2 =$

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

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

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$(x + 5)^2 = \ x^2 + 10x + 25$

$(x + A)^2 =$

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

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Consider the following problems.

$(x + 5)^2 = \; x^2 + 10x + 25$

$(x + A)^2 =$

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

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$$(x + 5)^2 = x^2 + 10x + 25$$

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

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

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Consider the following problems.

$$(x + 5)^2 = x^2 + 10x + 25$$

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

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

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Consider the following problems.

$(x + 5)^2 = x^2 + 10x + 25$

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

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

$(x - 7)^2 =$

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$= (x - 7)(x - 7) = x^2 - 7x$

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$(x + 5)^2 = x^2 + 10x + 25$

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

$(x - 7)^2 = x^2 - 14x$

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Consider the following problems.

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

$$(x - 7)^2 = x^2 - 14x$$

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$(x + 5)^2 = x^2 + 10x + 25$

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

$(x - 7)^2 = x^2 - 14x + 49$

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

These are '<u>perfect square trinomials</u>'.

Complete the Square

Consider the following problems.

$(x + 5)^2 = x^2 + 10x + 25$

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

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These are '<u>perfect square trinomials</u>'.

(trinomials that are perfect squares)

Complete the Square

Consider the following problems.

$(x + 5)^2 = x^2 + 10x + 25$

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

$(x - 7)^2 = x^2 - 14x + 49$

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

These are '<u>perfect square trinomials</u>'.

(trinomials that are perfect squares)

These equations can be written in reverse order.

Complete the Square

Consider the following problems.

$(x + 5)^2 = x^2 + 10x + 25$

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

$(x - 7)^2 = x^2 - 14x + 49$

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

$x^2 + 10x + 25 =$

These are '<u>perfect square trinomials</u>'.

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Complete the Square

Consider the following problems.

$(x + 5)^2 =$	$x^2 + 10x + 25$
$(x + A)^2 =$	$x^2 + 2Ax + A^2$
$(x - 7)^2 =$	$x^2 - 14x + 49$
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$x^2 + 10x + 25 = (x + 5)^2$

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Complete the Square

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Consider the following problems.

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

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

Given the first two terms of any perfect square trinomial,

Complete the Square

Consider the following problems.

$$x^2 + 10x + 25 = (x + 5)^2$$

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

$$x^2 - 14x + 49 = (x - 7)^2$$

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

Given the first two terms of any perfect square trinomial, you will have to '<u>complete the square</u>'.

Complete the Square

Consider the following problems.

$$x^2 + 10x + 25 = (x + 5)^2$$

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

$$x^2 - 14x + 49 = (x - 7)^2$$

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

Given the first two terms of any perfect square trinomial, you will have to '<u>complete the square</u>'. This means you will have to determine the third term that will make the expression a perfect square.

Complete the Square

Consider the following problems.

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Consider the following problems.

$x^2 + 10x + 25 = (x + 5)^2$

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

$x^2 - 14x + 49 = (x - 7)^2$

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

Given the first two terms of any perfect square trinomial, you will have to '<u>complete the square</u>'. This means you will have to determine the third term that will make the expression a perfect square.

Divide by 2.

$2A = 14 \rightarrow A = 7 \rightarrow A^2 = 49$

Square it.

$x^2 - 14x + 49$

Step 1: Divide the coefficient of x by 2. (This is the value of A.)

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$2A = 8 \rightarrow A = 4 \rightarrow A^2 = 16$

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Complete the Square

Consider the following problems.

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

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Given the first two terms of any perfect square trinomial, you will have to '<u>complete the square</u>'. This means you will have to determine the third term that will make the expression a perfect square.

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Divide by 2.

$2A = 12 \rightarrow A = 6$

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Divide by 2.

$2A = 12 \rightarrow A = 6$

Step 1: Divide the coefficient of x by 2. (This is the value of A.)

Complete the Square

Consider the following problems.

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$$2A = 12 \rightarrow A = 6 \rightarrow A^2 = 36$$

Square it.

Given the first two terms of any perfect square trinomial, you will have to '<u>complete the square</u>'. This means you will have to determine the third term that will make the expression a perfect square.

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Consider the following problems.

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

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$$x^2 + 5x$$

Divide by 2.

$$2A = 5 \rightarrow A = \frac{5}{2} \rightarrow A^2 = \frac{25}{4}$$

Square it.

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$$x^2 + 5x + \frac{25}{4} = \left(x + \frac{5}{2}\right)^2$$

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Complete the Square

Consider the following problems.

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

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$$x^2 - 9x$$

Given the first two terms of any perfect square trinomial, you will have to '<u>complete the square</u>'. This means you will have to determine the third term that will make the expression a perfect square.

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$$x^2 - 9x$$

Divide by 2.

$$2A = 9 \rightarrow A = \frac{9}{2}$$

Step 1: Divide the coefficient of x by 2.

Complete the Square

Consider the following problems.

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

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Divide by 2.

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

$x^2 - 9x$

Divide by 2.

$$2A = 9 \rightarrow A = \frac{9}{2} \rightarrow A^2 = \frac{81}{4}$$

Square it.

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Consider the following problems.

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If $N^2 = k$., then $N = \pm\sqrt{k}$.

Step 1: Write the equation in the form $x^2 + dx = f$

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

Step 3 : Apply the square root property. Write the equation in the form

$$x + A = \pm\sqrt{k}\ .$$

Algebra II Class Worksheet #4 Unit 6

Solve each of the following using the **complete the square method**.

1. $x^2 + 2x - 8 = 0$

$$x^2 + 2x = 8$$

$$x^2 + 2x + 1 = 8 + 1$$

$$(x + 1)^2 = 9$$

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Add -1 to both sides.

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$x = -1$

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Step 4 : **Solve for x. Write the equation in the form $x = -A \pm \sqrt{k}$.**

Step 5 : **Express the solutions in 'best form'.**

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$$x + 1 = \pm\sqrt{9}$$

$$x = -1 \pm \sqrt{9}$$

$$\sqrt{9} = 3$$

Step 1: Write the equation in the form $x^2 + dx = f$

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$$x = -1 \pm \sqrt{9}$$

$$\sqrt{9} = 3$$

$$x = -1 + 3$$

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$x = -1 + 3$ **or**

$\sqrt{9} = 3$

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$$\sqrt{9} = 3$$

$$x = -1 + 3 \quad \text{or} \quad x = -1 - 3$$

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$$x = -1 + 3 \quad \text{or} \quad x = -1 - 3$$

$$x = 2$$

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$$x = -1 + 3 \quad \text{or} \quad x = -1 - 3$$

$$x = 2 \quad \text{or} \quad x = -4$$

Step 1: Write the equation in the form $x^2 + dx = f$

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$$x = -1 + 3 \text{ or } x = -1 - 3$$

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Algebra II Class Worksheet #4 Unit 6

Solve each of the following using the **complete the square method**.

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

Algebra II Class Worksheet #4 Unit 6

Solve each of the following using the **complete the square method**.

2. $\mathbf{x^2 + 2x + 5 = 0}$

Algebra II Class Worksheet #4 Unit 6

Solve each of the following using the **complete the square method**.

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

Step 1: Write the equation in the form $x^2 + dx = f$

Algebra II Class Worksheet #4 Unit 6

Solve each of the following using the **complete the square method**.

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

Subtract 5 from both sides.

Step 1: Write the equation in the form $x^2 + dx = f$

Algebra II Class Worksheet #4 Unit 6

Solve each of the following using the **complete the square method**.

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

$x^2 + 2x$

Subtract 5 from both sides.

Step 1: Write the equation in the form $x^2 + dx = f$

Algebra II Class Worksheet #4 Unit 6

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Solve each of the following using the **complete the square method**.

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$x^2 + 2x = -5$

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Step 1: Write the equation in the form $x^2 + dx = f$

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Divide the coefficient of x by 2. (This is the value of A.)

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

$x^2 + 2x = -5$

$x^2 + 2x$

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

Step 1: Write the equation in the form $x^2 + dx = f$

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$2A = 2$

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Divide the coefficient of x by 2. (This is the value of A.)

Square A. (This is the term that must be added to '<u>complete the square</u>'.)

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$2A = 2$

$A = 1$

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Add 1 to both sides.

Step 1: Write the equation in the form $x^2 + dx = f$

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

$2A = 2$

$A = 1$

$A^2 = 1$

Step 1: Write the equation in the form $x^2 + dx = f$

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

Divide the coefficient of x by 2. (This is the value of A.)

Square A. (This is the term that must be added to '<u>complete the square</u>'.)

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

Algebra II Class Worksheet #4 Unit 6

Solve each of the following using the **complete the square method**.

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

$x^2 + 2x = -5$

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

$(x + 1)^2 = -4$

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Step 3 : Apply the square root property. Write the equation in the form

$$x + A = \pm\sqrt{k}\,.$$

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The Square Root Property

If $N^2 = k$., then $N = \pm\sqrt{k}$.

Step 1: Write the equation in the form $x^2 + dx = f$

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$x + 1 = \pm$

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<u>The Square Root Property</u>

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

$(x + 1)^2 = -4$

$x + 1 = \pm\sqrt{-4}$

Add -1 to both sides.

Step 1: Write the equation in the form $x^2 + dx = f$

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$x = -1$

Add -1 to both sides.

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$$x + 1 = \pm\sqrt{-4}$$

$$x = -1 \pm$$

Add -1 to both sides.

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$x = -1 \pm \sqrt{-4}$

Add -1 to both sides.

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$$x = -1 \pm \sqrt{-4}$$

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Step 3 : **Apply the square root property. Write the equation in the form**

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

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$$\sqrt{-4} = 2i$$

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$x = -1 + 2i$

$\sqrt{-4} = 2i$

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$x = -1 + 2i$ or

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Algebra II Class Worksheet #4 Unit 6

Solve each of the following using the **complete the square method**.

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

Algebra II Class Worksheet #4 Unit 6

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Algebra II Class Worksheet #4 Unit 6

Solve each of the following using the **complete the square method**.

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

Step 1: Write the equation in the form $x^2 + dx = f$

Algebra II Class Worksheet #4 Unit 6

Solve each of the following using the **complete the square method**.

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

Add 2 to both sides.

Step 1: Write the equation in the form $x^2 + dx = f$

Algebra II Class Worksheet #4 Unit 6

Solve each of the following using the **complete the square method**.

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

$x^2 + 2x$

Add 2 to both sides.

Step 1: Write the equation in the form $x^2 + dx = f$

Algebra II Class Worksheet #4 Unit 6

Solve each of the following using the **complete the square method**.

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Divide the coefficient of x by 2. (This is the value of A.)

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$x^2 + 2x = 2$

$x^2 + 2x$

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

$2A = 2$

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$A = 1$

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Square A. (This is the term that must be added to '<u>complete the square</u>'.)

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$x^2 + 2x + 1$

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$x^2 + 2x = 2$

$x^2 + 2x + 1 =$

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

$2A = 2$

$A = 1$

$A^2 = 1$

Add 1 to both sides.

Step 1: Write the equation in the form $x^2 + dx = f$

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

Divide the coefficient of x by 2. (This is the value of A.)

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Algebra II Class Worksheet #4 Unit 6

Solve each of the following using the **complete the square method**.

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

$x^2 + 2x = 2$

$x^2 + 2x + 1 = 2 + 1$

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

$2A = 2$

$A = 1$

$A^2 = 1$

Add 1 to both sides.

Step 1: Write the equation in the form $x^2 + dx = f$

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

Divide the coefficient of x by 2. (This is the value of A.)

Square A. (This is the term that must be added to '<u>complete the square</u>'.)

Algebra II Class Worksheet #4 Unit 6

Solve each of the following using the **complete the square method**.

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

$x^2 + 2x = 2$

$x^2 + 2x + 1 = 2 + 1$

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

$2A = 2$

$A = 1$

$A^2 = 1$

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

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$$x + A = \pm\sqrt{k}\,.$$

Algebra II Class Worksheet #4 Unit 6

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<u>The Square Root Property</u>

If $N^2 = k$., then $N = \pm\sqrt{k}$.

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Add -1 to both sides.

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

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$x \approx$

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Algebra II Class Worksheet #4 Unit 6

Solve each of the following using the **complete the square method**.

4. $\mathbf{x^2 - 3x + 3 = 0}$

Algebra II Class Worksheet #4 Unit 6

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Algebra II   Class Worksheet   #4   Unit 6

Solve each of the following using the **complete the square method**.

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

Step 1: Write the equation in the form $x^2 - dx = f$.

Algebra II Class Worksheet #4 Unit 6

Solve each of the following using the **complete the square method**.

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

Add -3 to both sides.

Step 1: Write the equation in the form $x^2 - dx = f$.

Algebra II Class Worksheet #4 Unit 6

Solve each of the following using the **complete the square method**.

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

$x^2 - 3x$

Add -3 to both sides.

Step 1: Write the equation in the form $x^2 - dx = f$.

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Step 1: Write the equation in the form $x^2 - dx = f$.

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Divide the coefficient of x by 2. (This is the value of A.)

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Divide the coefficient of x by 2. (This is the value of A.)

Algebra II Class Worksheet #4 Unit 6

Solve each of the following using the **complete the square method**.

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If $N^2 = k$., then $N = \pm\sqrt{k}$.

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

Algebra II   Class Worksheet   #4   Unit 6

Solve each of the following using the **complete the square method**.

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

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

$$x^2 - 3x + \frac{9}{4} = -3 + \frac{9}{4}$$

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Add -1 to both sides.

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$(x - \frac{3}{2})^2 = \frac{5}{4}$

The Square Root Property

If $N^2 = k$., then $N = \pm\sqrt{k}$.

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The Square Root Property

If $N^2 = k$., then $N = \pm\sqrt{k}$.

Step 1: Write the equation in the form $x^2 - dx = f$.

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Algebra II Class Worksheet #4 Unit 6

Solve each of the following using the **complete the square method**.

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

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Algebra II Class Worksheet #4 Unit 6

Solve each of the following using the **complete the square method**.

6. $x^2 - 3x - 10 = 0$

Algebra II Class Worksheet #4 Unit 6

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6. $x^2 - 3x - 10 = 0$

Step 1: Write the equation in the form $x^2 - dx = f$.

Algebra II Class Worksheet #4 Unit 6

Solve each of the following using the **complete the square method**.

6. $x^2 - 3x - 10 = 0$

Add 10 to both sides.

Step 1: Write the equation in the form $x^2 - dx = f$.

Algebra II Class Worksheet #4 Unit 6

Solve each of the following using the **complete the square method**.

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$x^2 - 3x =$

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Divide the coefficient of x by 2. (This is the value of A.)

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$x^2 - 3x = 10$

$x^2 - 3x$

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

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Step 1: Write the equation in the form $x^2 - dx = f$.

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

Divide the coefficient of x by 2. (This is the value of A.)

Algebra II Class Worksheet #4 Unit 6

Solve each of the following using the **complete the square method**.

6. $x^2 - 3x - 10 = 0$

$x^2 - 3x = 10$

$x^2 - 3x$

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

$2A = 3$

Step 1: Write the equation in the form $x^2 - dx = f$.

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$A = \frac{3}{2}$

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Algebra II   Class Worksheet   #4   Unit 6

Solve each of the following using the **complete the square method**.

6. $x^2 - 3x - 10 = 0$

$x^2 - 3x = 10$

$x^2 - 3x + \frac{9}{4}$

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

$2A = 3$

$A = \frac{3}{2}$

$A^2 = \frac{9}{4}$

Step 1: Write the equation in the form $x^2 - dx = f$.

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$A^2 = \frac{9}{4}$

Add $\frac{9}{4}$ to both sides.

Step 1: Write the equation in the form $x^2 - dx = f$.

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

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Algebra II Class Worksheet #4 Unit 6

Solve each of the following using the **complete the square method**.

6. $x^2 - 3x - 10 = 0$

$x^2 - 3x = 10$

$x^2 - 3x + \frac{9}{4} = 10 + \frac{9}{4}$

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

$2A = 3$

$A = \frac{3}{2}$

$A^2 = \frac{9}{4}$

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

Algebra II   Class Worksheet   #4   Unit 6

Solve each of the following using the **complete the square method**.

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$$x^2 - 3x = 10$$

$$x^2 - 3x + \frac{9}{4} = 10 + \frac{9}{4}$$

$$(x - \frac{3}{2})^2$$

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

$$2A = 3$$

$$A = \frac{3}{2}$$

$$A^2 = \frac{9}{4}$$

Step 1: Write the equation in the form $x^2 - dx = f$.

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Step 1: Write the equation in the form $x^2 - dx = f$.

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Step 3 : Apply the square root property. Write the equation in the form

$$x - A = \pm\sqrt{k}\,.$$

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The Square Root Property

If $N^2 = k$., then $N = \pm\sqrt{k}$.

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Add $\frac{3}{2}$ to both sides.

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

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$$x - \frac{3}{2} = \pm\sqrt{\frac{49}{4}}$$

$$x = \frac{3}{2} \pm \sqrt{\frac{49}{4}} = \frac{3}{2} \pm \frac{7}{2}$$

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Step 3 : Apply the square root property. Write the equation in the form

$$x - A = \pm\sqrt{k}\ .$$

Step 4 : Solve for x. Write the equation in the form $x = A \pm \sqrt{k}$.

Step 5 : Express the solutions in ‘best form’.

Algebra II Class Worksheet #4 Unit 6

Solve each of the following using the **complete the square method**.

6. $x^2 - 3x - 10 = 0$

$$x^2 - 3x = 10$$

$$x^2 - 3x + \frac{9}{4} = 10 + \frac{9}{4}$$

$$\left(x - \frac{3}{2}\right)^2 = \frac{49}{4}$$

$$x - \frac{3}{2} = \pm\sqrt{\frac{49}{4}}$$

$$x = \frac{3}{2} \pm \sqrt{\frac{49}{4}} = \frac{3}{2} \pm \frac{7}{2}$$

$x =$

Step 1: Write the equation in the form $x^2 - dx = f$.

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

Step 3 : Apply the square root property. Write the equation in the form

$$x - A = \pm\sqrt{k}\ .$$

Step 4 : Solve for x. Write the equation in the form $x = A \pm \sqrt{k}$.

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$$x = \frac{3}{2} \pm \sqrt{\frac{49}{4}} = \frac{3}{2} \pm \frac{7}{2}$$

$$x = \frac{3+7}{2}$$

Step 1: Write the equation in the form $x^2 - dx = f$.

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

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$$x - \frac{3}{2} = \pm\sqrt{\frac{49}{4}}$$

$$x = \frac{3}{2} \pm \sqrt{\frac{49}{4}} = \frac{3}{2} \pm \frac{7}{2}$$

$$x = \frac{3+7}{2} = 5$$

Step 1: Write the equation in the form $x^2 - dx = f$.

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

Step 3 : Apply the square root property. Write the equation in the form

$$x - A = \pm\sqrt{k}\ .$$

Step 4 : Solve for x. Write the equation in the form $x = A \pm \sqrt{k}$.

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

Algebra II Class Worksheet #4 Unit 6

Solve each of the following using the **complete the square method**.

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$$x - \frac{3}{2} = \pm\sqrt{\frac{49}{4}}$$

$$x = \frac{3}{2} \pm \sqrt{\frac{49}{4}} = \frac{3}{2} \pm \frac{7}{2}$$

$$x = \frac{3+7}{2} = 5 \quad \text{or}$$

Step 1: Write the equation in the form $x^2 - dx = f$.

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

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$$x - A = \pm\sqrt{k}\,.$$

Step 4 : Solve for x. Write the equation in the form $x = A \pm \sqrt{k}$.

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Algebra II Class Worksheet #4 Unit 6

Solve each of the following using the **complete the square method**.

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$$x = \frac{3+7}{2} = 5 \quad \text{or} \quad x =$$

Step 1: Write the equation in the form $x^2 - dx = f$.

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$$x = \frac{3}{2} \pm \sqrt{\frac{49}{4}} = \frac{3}{2} \pm \frac{7}{2}$$

$$x = \frac{3+7}{2} = 5 \quad \text{or} \quad x = \frac{3-7}{2}$$

Step 1: Write the equation in the form $x^2 - dx = f$.

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

Step 3 : Apply the square root property. Write the equation in the form

$$x - A = \pm\sqrt{k}\,.$$

Step 4 : Solve for x. Write the equation in the form $x = A \pm \sqrt{k}$.

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$$x - \frac{3}{2} = \pm\sqrt{\frac{49}{4}}$$

$$x = \frac{3}{2} \pm \sqrt{\frac{49}{4}} = \frac{3}{2} \pm \frac{7}{2}$$

$$x = \frac{3+7}{2} = 5 \quad \text{or} \quad x = \frac{3-7}{2} = -2$$

Step 1: Write the equation in the form $x^2 - dx = f$.

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

Step 3 : Apply the square root property. Write the equation in the form

$$x - A = \pm\sqrt{k}\,.$$

Step 4 : Solve for x. Write the equation in the form $x = A \pm \sqrt{k}$.

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Algebra II Class Worksheet #4 Unit 6

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$$x = \frac{3}{2} \pm \sqrt{\frac{49}{4}} = \frac{3}{2} \pm \frac{7}{2}$$

$$x = \frac{3+7}{2} = 5 \quad \text{or} \quad x = \frac{3-7}{2} = -2$$

Step 1: Write the equation in the form $x^2 - dx = f$.

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

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Step 4 : Solve for x. Write the equation in the form $x = A \pm \sqrt{k}$.

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Algebra II Class Worksheet #4 Unit 6

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$$x - \frac{3}{2} = \pm\sqrt{\frac{49}{4}}$$

$$x = \frac{3}{2} \pm \sqrt{\frac{49}{4}} = \frac{3}{2} \pm \frac{7}{2}$$

$$x = \frac{3+7}{2} = 5 \quad \text{or} \quad x = \frac{3-7}{2} = -2$$

Step 1: Write the equation in the form $x^2 - dx = f$.

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

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

Algebra II Class Worksheet #4 Unit 6

Solve each of the following using the **complete the square method**.

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

Algebra II Class Worksheet #4 Unit 6

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Algebra II Class Worksheet #4 Unit 6

Solve each of the following using the **complete the square method**.

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

Step 1: Write the equation in the form $x^2 - dx = f$.

Algebra II Class Worksheet #4 Unit 6

Solve each of the following using the **complete the square method**.

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

Add 2 to both sides.

Step 1: Write the equation in the form $x^2 - dx = f$.

Algebra II Class Worksheet #4 Unit 6

Solve each of the following using the **complete the square method**.

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

$3x^2 - 2x =$

Add 2 to both sides.

Step 1: Write the equation in the form $x^2 - dx = f$.

Algebra II Class Worksheet #4 Unit 6

Solve each of the following using the **complete the square method**.

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

$3x^2 - 2x = 2$

Add 2 to both sides.

Step 1: Write the equation in the form $x^2 - dx = f$.

Algebra II Class Worksheet #4 Unit 6

Solve each of the following using the **complete the square method**.

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

$3x^2 - 2x = 2$

Step 1: Write the equation in the form $x^2 - dx = f$.

Algebra II Class Worksheet #4 Unit 6

Solve each of the following using the **complete the square method**.

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

$3x^2 - 2x = 2$

Divide both sides by 3.

Step 1: Write the equation in the form $x^2 - dx = f$.

Algebra II Class Worksheet #4 Unit 6

Solve each of the following using the **complete the square method**.

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

$3x^2 - 2x = 2$ →

Divide both sides by 3.

Step 1: Write the equation in the form $x^2 - dx = f$.

Algebra II Class Worksheet #4 Unit 6

Solve each of the following using the **complete the square method**.

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

$3x^2 - 2x = 2 \rightarrow x^2$

Divide both sides by 3.

Step 1: Write the equation in the form $x^2 - dx = f$.

Algebra II Class Worksheet #4 Unit 6

Solve each of the following using the **complete the square method**.

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

$3x^2 - 2x = 2 \rightarrow x^2 - \frac{2}{3}x$

Divide both sides by 3.

Step 1: Write the equation in the form $x^2 - dx = f$.

Algebra II Class Worksheet #4 Unit 6

Solve each of the following using the **complete the square method**.

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

$3x^2 - 2x = 2 \rightarrow x^2 - \frac{2}{3}x =$

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Step 1: Write the equation in the form $x^2 - dx = f$.

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

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Step 1: Write the equation in the form $x^2 - dx = f$.

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

Divide the coefficient of x by 2. (This is the value of A.)

Algebra II   Class Worksheet   #4   Unit 6

Solve each of the following using the **complete the square method**.

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

$3x^2 - 2x = 2 \rightarrow x^2 - \frac{2}{3}x = \frac{2}{3}$

$x^2 - \frac{2}{3}x$

Step 1: Write the equation in the form $x^2 - dx = f$.

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

Divide the coefficient of x by 2. (This is the value of A.)

Algebra II Class Worksheet #4 Unit 6

Solve each of the following using the **complete the square method**.

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

$3x^2 - 2x = 2 \rightarrow x^2 - \frac{2}{3}x = \frac{2}{3}$

$x^2 - \frac{2}{3}x$

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

Step 1: Write the equation in the form $x^2 - dx = f$.

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

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$x^2 - \frac{2}{3}x$

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

$2A = \frac{2}{3}$

Step 1: Write the equation in the form $x^2 - dx = f$.

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$x^2 - \frac{2}{3}x$

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

$2A = \frac{2}{3}$

$A = \frac{1}{3}$

Step 1: Write the equation in the form $x^2 - dx = f$.

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$2A = \frac{2}{3}$

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Step 1: Write the equation in the form $x^2 - dx = f$.

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

Divide the coefficient of x by 2. (This is the value of A.)

Square A. (This is the term that must be added to '<u>complete the square</u>'.)

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Solve each of the following using the **complete the square method**.

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$3x^2 - 2x = 2 \rightarrow x^2 - \frac{2}{3}x = \frac{2}{3}$

$x^2 - \frac{2}{3}x$

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

$2A = \frac{2}{3}$

$A = \frac{1}{3}$

$A^2 = \frac{1}{9}$

Step 1: Write the equation in the form $x^2 - dx = f$.

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

Divide the coefficient of x by 2. (This is the value of A.)

Square A. (This is the term that must be added to '<u>complete the square</u>'.)

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Solve each of the following using the **complete the square method**.

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$3x^2 - 2x = 2 \rightarrow x^2 - \frac{2}{3}x = \frac{2}{3}$

$x^2 - \frac{2}{3}x + \frac{1}{9}$

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

$2A = \frac{2}{3}$

$A = \frac{1}{3}$

$A^2 = \frac{1}{9}$

Step 1: Write the equation in the form $x^2 - dx = f$.

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$x^2 - \frac{2}{3}x + \frac{1}{9} =$

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

$2A = \frac{2}{3}$

$A = \frac{1}{3}$

$A^2 = \frac{1}{9}$

Add $\frac{1}{9}$ to both sides.

Step 1: Write the equation in the form $x^2 - dx = f$.

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

Divide the coefficient of x by 2. (This is the value of A.)

Square A. (This is the term that must be added to '<u>complete the square</u>'.)

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$x^2 - \boxed{\frac{2}{3}}x + \frac{1}{9} = \frac{2}{3} + \frac{1}{9}$

$x^2 - \boxed{2A}x + A^2 = (x - A)^2$

$2A = \frac{2}{3}$

$A = \frac{1}{3}$

$A^2 = \frac{1}{9}$

Add $\frac{1}{9}$ to both sides.

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

$2A = \frac{2}{3}$

$A = \frac{1}{3}$

$A^2 = \frac{1}{9}$

Step 1: Write the equation in the form $x^2 - dx = f$.

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

Divide the coefficient of x by 2. (This is the value of A.)

Square A. (This is the term that must be added to '<u>complete the square</u>'.)

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

Algebra II   Class Worksheet   #4   Unit 6

Solve each of the following using the **complete the square method**.

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

$3x^2 - 2x = 2 \rightarrow x^2 - \frac{2}{3}x = \frac{2}{3}$

$x^2 - \frac{2}{3}x + \frac{1}{9} = \frac{2}{3} + \frac{1}{9}$

$(x - \frac{1}{3})^2$

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

$2A = \frac{2}{3}$

$A = \frac{1}{3}$

$A^2 = \frac{1}{9}$

Step 1: Write the equation in the form $x^2 - dx = f$.

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

Divide the coefficient of x by 2. (This is the value of A.)

Square A. (This is the term that must be added to '<u>complete the square</u>'.)

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$$3x^2 - 2x = 2 \rightarrow x^2 - \frac{2}{3}x = \frac{2}{3}$$

$$x^2 - \frac{2}{3}x + \frac{1}{9} = \frac{2}{3} + \frac{1}{9}$$

$$\left(x - \frac{1}{3}\right)^2$$

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

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$$A = \frac{1}{3}$$

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Step 1: Write the equation in the form $x^2 - dx = f$.

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

Divide the coefficient of x by 2. (This is the value of A.)

Square A. (This is the term that must be added to '<u>complete the square</u>'.)

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

Algebra II Class Worksheet #4 Unit 6

Solve each of the following using the **complete the square method**.

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

$$3x^2 - 2x = 2 \rightarrow x^2 - \frac{2}{3}x = \frac{2}{3}$$

$$x^2 - \boxed{\frac{2}{3}}x + \frac{1}{9} = \frac{2}{3} + \frac{1}{9}$$

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

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If $N^2 = k$., then $N = \pm\sqrt{k}$.

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$$3x^2 - 2x = 2 \rightarrow x^2 - \frac{2}{3}x = \frac{2}{3}$$

$$x^2 - \frac{2}{3}x + \frac{1}{9} = \frac{2}{3} + \frac{1}{9}$$

$$\left(x - \frac{1}{3}\right)^2 = \frac{7}{9}$$

$$x - \frac{1}{3} = \pm\sqrt{\frac{7}{9}}$$

$$x = \frac{1}{3} \pm \sqrt{\frac{7}{9}} = \frac{1}{3} \pm \frac{\sqrt{7}}{3}$$

$$x = \frac{1+\sqrt{7}}{3} \approx 1.22 \text{ or } x = \frac{1-\sqrt{7}}{3} \approx -0.55$$

Step 1: Write the equation in the form $x^2 - dx = f$.

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Step 3 : Apply the square root property. Write the equation in the form

$$x - A = \pm\sqrt{k}\,.$$

Step 4 : Solve for x. Write the equation in the form $x = A \pm \sqrt{k}$.

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

Algebra II Class Worksheet #4 Unit 6

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Add 1 to both sides.

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Solve each of the following using the **complete the square method**.

8. $3x^2 - 2x - 1 = 0$

$3x^2 - 2x = 1$

Divide both sides by 3.

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$3x^2 - 2x = 1 \rightarrow x^2$

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Algebra II Class Worksheet #4 Unit 6

Solve each of the following using the **complete the square method**.

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$3x^2 - 2x = 1 \rightarrow x^2 - \frac{2}{3}x$

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

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The Square Root Property

If $N^2 = k$., then $N = \pm\sqrt{k}$.

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$$x - \frac{1}{3} = \pm$$

The Square Root Property

If $N^2 = k$., then $N = \pm\sqrt{k}$.

Step 1: Write the equation in the form $x^2 - dx = f$.

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

Step 3 : Apply the square root property. Write the equation in the form

$$x - A = \pm\sqrt{k}\ .$$

Algebra II Class Worksheet #4 Unit 6

Solve each of the following using the **complete the square method**.

8. $3x^2 - 2x - 1 = 0$

$$3x^2 - 2x = 1 \rightarrow x^2 - \frac{2}{3}x = \frac{1}{3}$$

$$x^2 - \frac{2}{3}x + \frac{1}{9} = \frac{1}{3} + \frac{1}{9}$$

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Add $\frac{1}{3}$ to both sides.

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$x = \frac{1}{3} \pm$

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

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$$x = \frac{1}{3} + \frac{2}{3}$$

Step 1: Write the equation in the form $x^2 - dx = f$.

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

$x = \frac{1}{3} \pm \sqrt{\frac{4}{9}}$

$x = \frac{1}{3} + \frac{2}{3} = 1$

Step 1: Write the equation in the form $x^2 - dx = f$.

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$x = \frac{1}{3} + \frac{2}{3} = 1$ or

Step 1: Write the equation in the form $x^2 - dx = f$.

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$$x = \frac{1}{3} \pm\sqrt{\frac{4}{9}}$$

$$x = \frac{1}{3} + \frac{2}{3} = 1 \quad \text{or} \quad x = \frac{1}{3} - \frac{2}{3}$$

Step 1: Write the equation in the form $x^2 - dx = f$.

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$$x = \frac{1}{3} + \frac{2}{3} = 1 \text{ or } x = \frac{1}{3} - \frac{2}{3} = \frac{-1}{3}$$

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$$x = \frac{1}{3} \pm\sqrt{\frac{4}{9}}$$

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Algebra II   Class Worksheet   #4   Unit 6

Solve each of the following using the **complete the square method**.

9. $3x^2 - 2x + 3 = 0$

Algebra II Class Worksheet #4 Unit 6

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Algebra II Class Worksheet #4 Unit 6

Solve each of the following using the **complete the square method**.

9. $3x^2 - 2x + 3 = 0$

Step 1: Write the equation in the form $x^2 - dx = f$.

Algebra II Class Worksheet #4 Unit 6

Solve each of the following using the **complete the square method**.

9. $3x^2 - 2x + 3 = 0$

Add -3 to both sides.

Step 1: Write the equation in the form $x^2 - dx = f$.

Algebra II Class Worksheet #4 Unit 6

Solve each of the following using the **complete the square method**.

9. $3x^2 - 2x + 3 = 0$

$3x^2 - 2x =$

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Algebra II Class Worksheet #4 Unit 6

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Algebra II Class Worksheet #4 Unit 6

Solve each of the following using the **complete the square method**.

9. $3x^2 - 2x + 3 = 0$

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

Divide both sides by 3.

Step 1: Write the equation in the form $x^2 - dx = f$.

Algebra II Class Worksheet #4 Unit 6

Solve each of the following using the **complete the square method**.

9. $3x^2 - 2x + 3 = 0$

$3x^2 - 2x = -3 \rightarrow$

Divide both sides by 3.

Step 1: Write the equation in the form $x^2 - dx = f$.

Algebra II Class Worksheet #4 Unit 6

Solve each of the following using the **complete the square method**.

9. $3x^2 - 2x + 3 = 0$

$3x^2 - 2x = -3 \rightarrow x^2$

Divide both sides by 3.

Step 1: Write the equation in the form $x^2 - dx = f$.

Algebra II Class Worksheet #4 Unit 6

Solve each of the following using the **complete the square method**.

9. $3x^2 - 2x + 3 = 0$

$3x^2 - 2x = -3 \rightarrow x^2 - \frac{2}{3}x$

Divide both sides by 3.

Step 1: Write the equation in the form $x^2 - dx = f$.

Algebra II Class Worksheet #4 Unit 6

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$3x^2 - 2x = -3 \rightarrow x^2 - \frac{2}{3}x =$

Divide both sides by 3.

Step 1: Write the equation in the form $x^2 - dx = f$.

Algebra II Class Worksheet #4 Unit 6

Solve each of the following using the **complete the square method**.

9. $3x^2 - 2x + 3 = 0$

$3x^2 - 2x = -3 \rightarrow x^2 - \frac{2}{3}x = -1$

Divide both sides by 3.

Step 1: Write the equation in the form $x^2 - dx = f$.

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

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Step 1: Write the equation in the form $x^2 - dx = f$.

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

Divide the coefficient of x by 2. (This is the value of A.)

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$3x^2 - 2x = -3 \rightarrow x^2 - \frac{2}{3}x = -1$

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$3x^2 - 2x = -3 \rightarrow x^2 - \frac{2}{3}x = -1$

$x^2 - \frac{2}{3}x$

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

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

$2A = \frac{2}{3}$

Step 1: Write the equation in the form $x^2 - dx = f$.

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

$2A = \frac{2}{3}$

$A = \frac{1}{3}$

Step 1: Write the equation in the form $x^2 - dx = f$.

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Step 1: Write the equation in the form $x^2 - dx = f$.

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

Divide the coefficient of x by 2. (This is the value of A.)

Square A. (This is the term that must be added to '<u>complete the square</u>'.)

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$x^2 - \frac{2}{3}x$

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

$2A = \frac{2}{3}$

$A = \frac{1}{3}$

$A^2 = \frac{1}{9}$

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Algebra II Class Worksheet #4 Unit 6

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Algebra II Class Worksheet #4 Unit 6

Solve each of the following using the **complete the square method**.

9. $3x^2 - 2x + 3 = 0$

$$3x^2 - 2x = -3 \rightarrow x^2 - \frac{2}{3}x = -1$$

$$x^2 - \frac{2}{3}x + \frac{1}{9} = -1 + \frac{1}{9}$$

$$\left(x - \frac{1}{3}\right)^2 = \frac{-8}{9}$$

$$x - \frac{1}{3} = \pm\sqrt{\frac{-8}{9}}$$

$$x = \frac{1}{3} \pm \sqrt{\frac{-8}{9}} = \frac{1}{3} \pm \frac{2\sqrt{2}}{3}i$$

$$x = \frac{1}{3} + \frac{2\sqrt{2}}{3}i$$

Step 1: Write the equation in the form $x^2 - dx = f$.

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

Step 3 : Apply the square root property. Write the equation in the form

$$x - A = \pm\sqrt{k}\ .$$

Step 4 : Solve for x. Write the equation in the form $x = A \pm \sqrt{k}$.

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Good luck on your homework !!

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