LT 5.3
Topic: Discriminant
How can you solve a quadratic equation and apply it with real world applications?

Dec 10-2:31 PM

☆ 5.3 Day 1 ☆

Is there a way to tell what are the x intercepts going to be?

We use the Discriminant.....

$y = ax^2 + bx + c$ $b^2 - 4ac$

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5.3 Day 1

Determing The Number of Solutions of a Quadratic Equation

Consider the quadratic equation $ax^2 + bx + c = 0$

If $b^2 - 4ac$ is **positive (> 0)**, then the equation has **2 real solutions**.

$b^2 - 4ac \rightarrow +$ ⇒ 2 Real Solutions

Perfect Square: Factorable

Not: not Factorable

Jan 27-8:20 AM

5.3 Day 1

Determing The Number of Solutions of a Quadratic Equation

Consider the quadratic equation $ax^2 + bx + c = 0$

If $b^2 - 4ac$ is **zero**, then the equation has **1 Real Solution**.

$b^2 - 4ac \rightarrow 0$ ⇒ 1 Real Solution

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5.3 Day 1

Determing The Number of Solutions of a Quadratic Equation

Consider the quadratic equation $ax^2 + bx + c = 0$

If $b^2 - 4ac$ is **negative (< 0)**, then the equation has **no real solution (2 Imaginary Solutions)**.

$b^2 - 4ac \rightarrow - \rightarrow$ 0 Solution

2 Imaginary Solution

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5.3 Day 1

Let's practice...

1. Find the discriminant

2. Find the number of solutions

3. Find the type of solutions

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

$(-5)^2 - 4(3)(2)$

1

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5.3 Day 1

Let's practice...

1. Find the discriminant

2. Find the number of solutions

3. Find the type of solutions

2. $4x^2 - 20x + 25 = 0$

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5.3 Day 1

Let's practice...

1. Find the discriminant

2. Find the number of solutions

3. Find the type of solutions

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

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

$3^2 - 4(2)(7)$

$9 - 56$

-47

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5.3 Day 1

Let's practice...

1. Find the discriminant

2. Find the number of solutions

3. Find the type of solutions

4. $x^2 - 5 = 2x$

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

$(-2)^2 - 4(1)(-5)$

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5.3 Day 1

Word Problem

Taylor Swift has an online shopping store that Ms. Olson LOVES to shop at. The profit Taylor makes each year is given by $P = 0.004x^2 11x + 29980$ where x is the number of products she sells. Her goal is to make $50,000 each year.

1. Write the equation that would represent a $50,000 profit.

2. Write the equation in standard form

3.Find the discriminant

4. Will Taylor Swift make the budget?

Dec 12-12:52 PM