Section 4-7 The Quadratic Formula

-We can use the quadratic formula to solve a quadratic equation that is in standard form.

If $ax^2 + bx + c = 0$, and a is not 0, then the solutions (roots) are:

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

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Use the quadratic formula to solve:

$$2x^{2}-x=4=0$$

$$G=\lambda$$

$$b=-1$$

$$C=-1$$

$$X=\frac{1\pm\sqrt{1+3a}}{4}$$

$$X=\frac{1\pm\sqrt{33}}{4}$$

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Solve using the quadratic formula.

$$x^{2} + 4x + 4 = 0$$

$$G = 1$$

$$b = 4$$

$$c = 4$$

$$(x + 2)^{2} = 0$$

$$x = -4 + 16 + 160$$

$$(x + 2)^{2} = 0$$

$$x + 3 = 0$$

$$x = -2$$

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You are selling wrapping paper to raise money for the underwater basket-weaving club this holiday season. The equation

 $f(x) = -6x^2 + 280 \text{ x} - 1200 \text{ models the total profit p}$ as a function of the price x per roll. What is the smallest amount in dollars you can charge per roll to make a profit of \$1500?

$$0 = -(ex^2 + 280x - 2700)$$



The Discriminant:

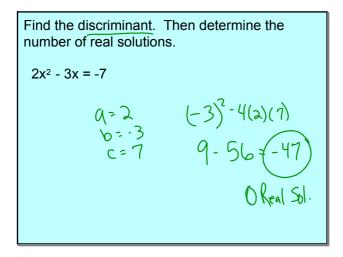
b² - 4ac is called the discriminant

If b^2 - 4ac > 0, then the quadratic has 2 distinct real solutions

If b^2 - 4ac = 0 then the equation has 1 real solution (a double root)

If b^2 - 4ac < 0, the the equation has 0 real solutions.

4-7.notebook December 06, 2013



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Dec 13-2:29 PM Dec 9-2:01 PM

Nov 18-10:36 AM