

Today's Learning Goal(s):

Date: _____

By the end of the class, I will be able to:

- a) solve a quadratic equation by:
 - i) factoring
 - ii) using the quadratic formula
- b) express the solution to a quadratic equation in simplified radical form.

Links

Last day's work:

3.5 Solving Quadratic Equations

Date: _____

Recall: Exact Values means... NO decimals

... the answer works out exactly to a whole number,
or fractions, or radicals

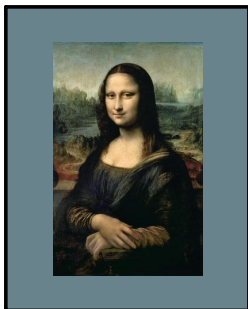
Ex. 1: Determine the exact roots of:

a) $2x^2 - 11x - 6 = 0$

b) $2x^2 - 6x + 1 = 0$

Ex. 2: A football is punted off the roof. Its height, in m above the ground is given $h(t) = -4.9t^2 + 19.6t + 40$, after t seconds.
When, to two decimal places, does the ball hit the ground?

Ex. 3: A picture is $30\text{ cm} \times 20\text{ cm}$. It is to be surrounded by a mat of uniform width.
If the mat is the same area as the picture, then how wide is the mat?



Let w represent the width of the mat, in cm .

Are there any Homework Questions you would like to see on the board?

Last day's work:

Today's Homework Practice includes:

pp. 177-178 #1ac, 2ac, 4ace, 5, 6ac, 9, 10, 13

An additional example follows...

Ex.4 Determine the zeros of $3x^2 + 2x - 10 = 0$.

Give both exact and approximate answers (to the nearest hundredth)

$$3x^2 + 2x - 10 = 0$$

Can't factor, so

use quadratic formula

$$a = 3$$

$$b = 2$$

$$c = -10$$

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

$$x = \frac{-2 \pm \sqrt{124}}{6}$$

$$x = \frac{-2 \pm 2\sqrt{31}}{6}$$

$$x = \frac{2(-1 \pm \sqrt{31})}{6}$$

$$x = \frac{(-1 \pm \sqrt{31})}{3} \quad \leftarrow \text{exact values}$$

$$x = \frac{-1 + \sqrt{31}}{3} \quad \text{and} \quad x = \frac{-1 - \sqrt{31}}{3}$$

$$x \doteq 1.52 \qquad x \doteq -2.19$$

approximate values