The Quadratic Formula and Discriminant

- When using the _____ _____ _____ technique on the standard form quadratic, the values for x, in terms of a, b, and c are:

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

- Known as the _____ _____ , ANY quadratic can be solved using this technique

- Examples:

  $$2x^2 - x = 4 \qquad\qquad x^2 = -4x - 3$$

- The computation inside the radical is known as the _____; $d = b^2 - 4ac$
  - When _____ , there will be _____ real-number solutions
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  - Why??

- Often, it is worthwhile to consider the quadratic formula;

  $$\blacktriangleright x = \frac{-b \pm \sqrt{d}}{2a}, \text{ where } d = b^2 - 4ac$$

  - Determine the discriminant and the nature of the roots. Then solve for x

$2x^2 - 3x - 7 = 0$	$x^2 = 6x - 5$	$x^2 + 17x + 4 = 0$