

LESSONS 6.2/6.3

SOLVING QUADRATIC EQUATIONS
 1. BY GRAPHING
 2. BY FACTORING

SOLVE
 FIND SOLUTIONS
 ROOT
 ZEROS

$$y = x^2 - 3x - 4$$

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

$$0 = (x+1)(x-4)$$

$x+1=0$ $x-4=0$
 $x=-1$ $x=4$

CROSSES X-AXIS

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$$y = x^2 - 4x + 4$$

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

$$0 = (x-2)(x-2) = (x-2)^2$$

$x-2=0$ $x-2=0$
 $x=2$ $x=2$

GRAPH TOUCHES X-AXIS ONCE.
 ONE SOLUTION

Feb 22-1:39 PM

$$y = x^2 - 4x + 5$$

$$0 = x^2 - 4x + 5$$

$$0 = (x \quad)(x \quad)$$

PRIME
NO REAL ROOTS

GRAPH NEVER TOUCHES X-AXIS

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

CALC. FIRST ROOTS ZEROS

$x = -1.5$ $x = 3$

$(x + 1.5)(x - 3)$

$(2x + 3)(x - 3)$ FACTORED FORM

NEVER LEAVE DECIMALS IN FACTORED ANSWER.

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$$5x^2 - 5x - 60 = 0$$

$x = -3$ $x = 4$

$$5(x+3)(x-4)$$

GCF
5

Feb 22-2:03 PM

ROOTS OF $\frac{1}{2}$ AND $\frac{4}{3}$

WHAT IS THE EQUATION?

$(x - \frac{1}{2})(x - \frac{4}{3})$

$\downarrow \times 2$ $\downarrow \times 3$

$(2x - 1)(3x - 4)$ FACTORED FORM

$$6x^2 - 8x - 3x + 4$$

$$y = 6x^2 - 11x + 4$$

Feb 25-1:29 PM