Name _____ Date _____

Finding and Using the Discriminant - Guided Lesson Explanation

The discriminant of a quadratic equation ($ax^2 + bx + c = 0$) is $b^2 - 4ac$. It is the expression under the radial in the quadratic formula.

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

Explanation#1

Find the discriminant of $6n^2 - 3n + 7 = 0$

$b^2 - 4ac$

$-3^2 - 4\,(6)(7)$ Plug in a = 6, b= -3, and c = 7

$9 - 4\,(6)(7)$ Squares

$9 - 168$ Multiply

-159 Subtract

Answer is: -159

Explanation#2

Find the discriminant of $4d^2 + 9d - 9 = 0$

$b^2 - 4ac$

$9^2 - 4\,(4)(-9)$ Plug in a = 4, b= 9, and c = -9

$81 - 4\,(4)(-9)$ Squares

$81 + 144$ Multiply

225 Add

Answer is: 225

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Explanation # 3

Find the discriminant of $3w^2 - 8s + 2 = 0$

$b^2 - 4ac$

$-8^2 - 4\ (3)(2)$ Plug in a = 3, b= -8, and c = 2

64 - 4 (3)(2) Squares

64 - 24 Multiply

40 Subtract

Answer is: 40