Instructional Material 2.4

Discriminant $\Longrightarrow b^2 - 4ac$

3 possible cases that will determine the number and type of roots of a quadratic equation...

$b^2 - 4ac > 0$ (positive)

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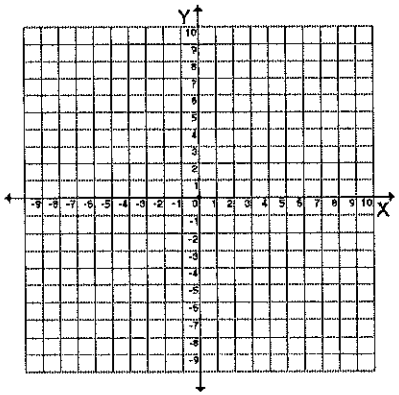
TWO REAL ROOTS

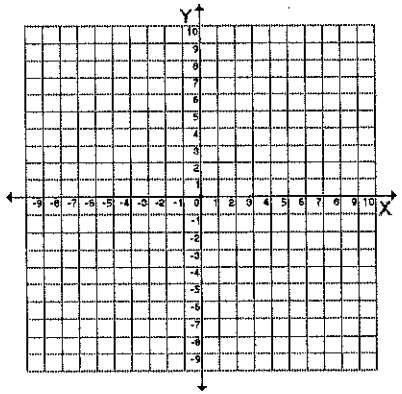


Ex. $x^2 + 6x + 5 = 0$

$b^2 - 4ac = 0$ (zero)

⇩

ONE REAL ROOT

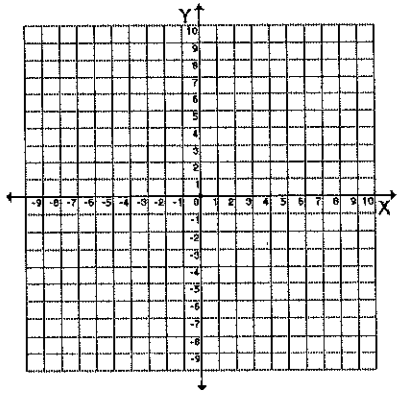


Ex. $x^2 + 6x + 9 = 0$

$b^2 - 4ac < 0$ (negative)

⇩

TWO IMAGINARY ROOTS



Ex. $x^2 + 6x + 11 = 0$