METHODS AND MEANINGS

MATH NOTES

Zero Product Property

When the product of two or more factors is zero, one of those factors must be zero. This is known as the **Zero Product Property**:

$$\text{If } a \cdot b = 0, \text{ then } a = 0 \text{ or } b = 0.$$

For example, if $(2x - 3)(x + 5) = 0$, then $2x - 3 = 0$ or $x + 5 = 0$. Solving yields the solutions $x = \frac{3}{2}$ or $x = -5$. This property helps you solve quadratic equations when the equation can be written as a product of factors.

5.1.5

5-49	Equation	Equation in Factored Form	Line of Symmetry/ Axis of Symmetry	Y-intercepts	x-intercepts	Open up? Or down?	Vertex	Is vertex a minimum or maximum?
A		$y = (x+3)^2$						
B	$y = x^2 + 3x - 28$							
C	$y = x^2 - 11x + 28$							
D	$y = -x^2 + 4$							
E	$y = x^2 + 10x + 24$							
F	$y = 2x^2 + 11x + 5$							
G	$y = x^2 - 4x$							
H		$y = (x-3)^2$						
I	$y = 4x^2 - 4x - 3$							