SM2 PROPERTIES 5-2 (Intercept Form Quadratic Equation)

The <u>Zero Product Property</u>: Zero multiplied by any number equals zero (elementary school definition).

The <u>Zero Product Property</u>: (MUCH BETTER DEFINITION) If two numbers are multiplied together and the product equals zero, then <u>one or both of the factors must equal zero.</u>

$$A * B = 0 \rightarrow \text{either } A = 0 \text{ or } B = 0 \text{ or both A and B equal zero.}$$

This property is used the find the x-intercepts for the *intercept form* quadratic equation.

Example: $y = (x + 4)(x - 2)$

The <u>y-value</u> of an x-intercept <u>always</u> equals <u>zero.</u>

$$0 = (x + 4)(x - 2)$$

$$0 = A * B$$

<u>Zero Product Property</u>: either (x + 4) = 0 or (x − 2) = 0

$$x + 4 = 0 \qquad x - 2 = 0$$

$$x = -4 \qquad x = +2$$