

Oct 16/07

ABSOLUTE VALUE | |

- DISTANCE FROM ZERO

THE RESULT OF AN ABSOLUTE VALUE EXPRESSION MUST BE POSITIVE

$$\text{Ex. } |x - 3| = 8$$

$$x - 3 = 8 \quad x - 3 = -8$$

$$x = 11 \quad x = -5$$

$$\text{Ex } 3|x + 4| - 2 = 13$$

$$\frac{\cancel{3}|x + 4|}{\cancel{3}} = \frac{15}{3}$$

$$|x + 4| = 5$$

$$x + 4 = 5 \quad x + 4 = -5$$

$$x = 1 \quad x = -9$$

Ex

$$|2x - 3| = |x + 4|$$

$$2x - 3 = x + 4$$

$$x = 7$$

$$2x - 3 = -(x + 4)$$

$$2x - 3 = -x - 4$$

$$3x = -1$$

$$x = -\frac{1}{3}$$

$$-(2x - 3) = -(x + 4)$$

$$-2x + 3 = -x + 4$$

$$7 = x$$

$$-(2x - 3) = x + 4$$

$$-2x + 3 = x + 4$$

$$-3x = 1$$

$$x = -\frac{1}{3}$$

$$\text{Ex } |x^2 + 4x - 12| = 0$$

$$(x + 6)(x - 2) = 0$$

$$x = -6 \text{ and } 2$$