

### 7.3 Absolute Value Equations:

When solving absolute value equations, we can use a piecewise function to determine an equation to solve for the variable.

In general, we can use two cases:

#### Case 1:

The absolute value is positive (or zero).

#### Case 2:

The absolute value is negative.

Example 1: Solve

a.)  $|x| = 5$

b.)  $|x - 2| = 1$

c.)  $|1 - 3x| = 5$

d.)  $|x + 2| = -1$

e.)  $|2x - 3| = x + 1$

$$f.) |2x - 3| = -3x + 5$$

$$g.) |x^2 - 3x| = 4$$

$$h.) |x^2 - x| = x + 1$$