

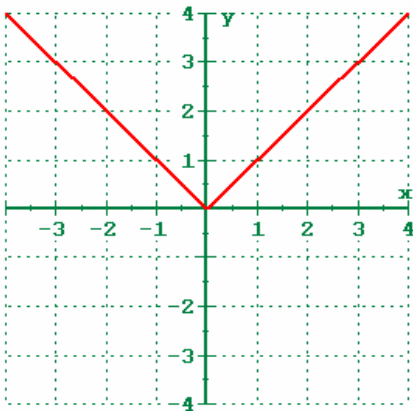
## 2-7 Families of Functions

3 Types of Families:

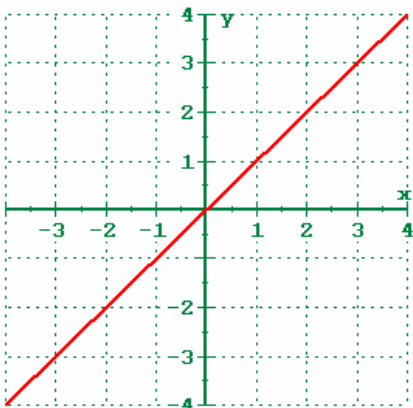
<u>Family</u>	<u>Characteristics</u>	<u>Equation</u>	<u>Graph</u>
Linear	power of x is 1	$y = 2x - 1$	line
Quadratic	power of x is 2	$f(x) = x^2 + 1$	U-shaped
Absolute-Value	x inside absolute-Value bars	$y =  x  + 2$	V-shaped

Examples:

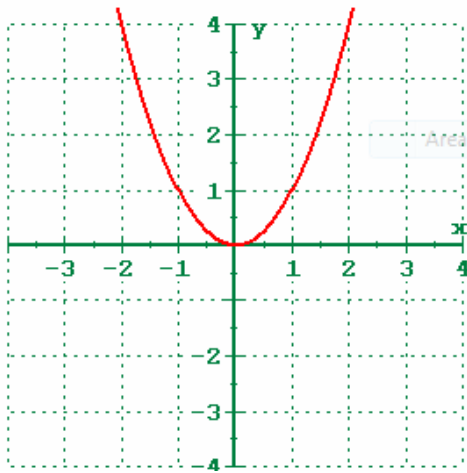
Absolute Value function



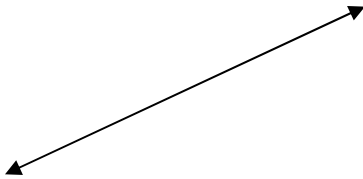
Linear Function



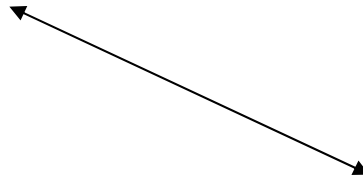
## Quadratic Function



Graphs should be read from Left to Right.



From L-R this graph is rising



From L-R this graph is falling

### UP or DOWN?

If (+) in front of variable term the graph goes up.

If (-) in front of variable term the graph goes down.

Examples: Tell whether each graph goes up or down and the shape of the graph.

1)  $y = -3x + 4$

4)  $y = |x| + 1$

2)  $f(x) = x^2 - 4$

5)  $f(x) = -2|x| + 4$

3)  $y = -x^2 + 7$