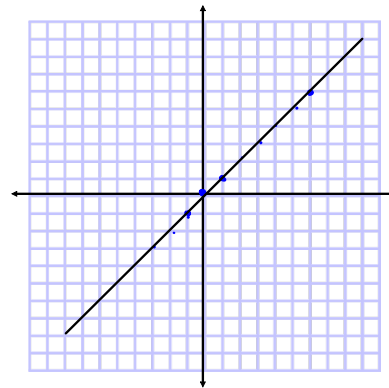3-3 Parent Functions and Graphs

Objective: I can recognize quadratic, linear, and exponential
functions by both their equations and graphs.

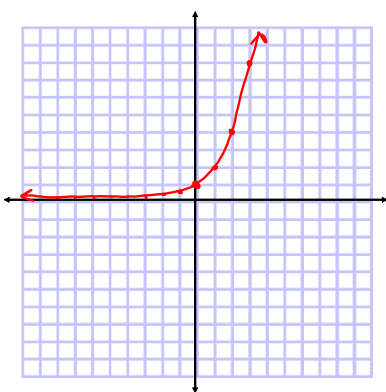### Linear
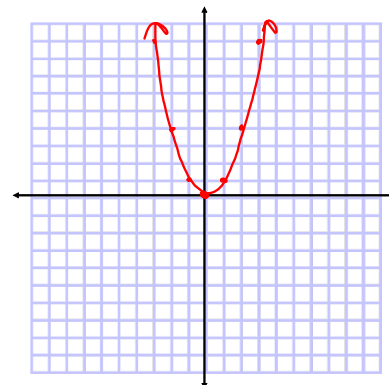
$$y = mx + b$$

$$f(x) = x$$

$$f(1) =$$

X	Y
0	0
1	1
-1	-1
6	6

Exponential

$$f(1) = 2^1$$

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

X	Y
0	1
1	2
2	4
3	8
-1	$\frac{1}{2}$
-2	

Quadratic

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

X	Y
0	0
1	1
2	4
3	9
-1	1
-2	4

1

Is the function linear, exponential, or quadratic?

Quadratic   Linear

Exponential

Exp
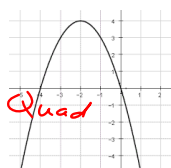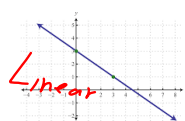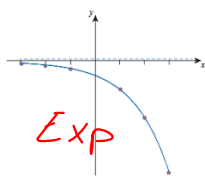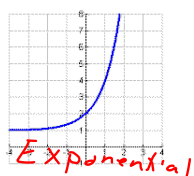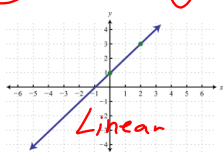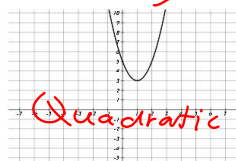
Linear   Quad

Is the function linear, exponential, or quadratic?

$$f(x) = x^2 + 2 \qquad f(x) = 2^x - 4$$
Quadratic   Exponential

$$f(x) = 2^x + 1 \qquad f(x) = 3x - 2$$
EXP   Linear
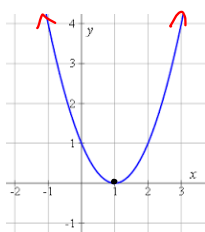
$$f(x) = -3(x-2)^2 + 5 \qquad f(x) = 2x + 1$$
Quad   Linear

1. Is the function linear, exponential, or quadratic?
2. State the domain and range of the function.

1. Quad

Dom: $(-\infty, \infty)$

Ran: $[0, \infty)$