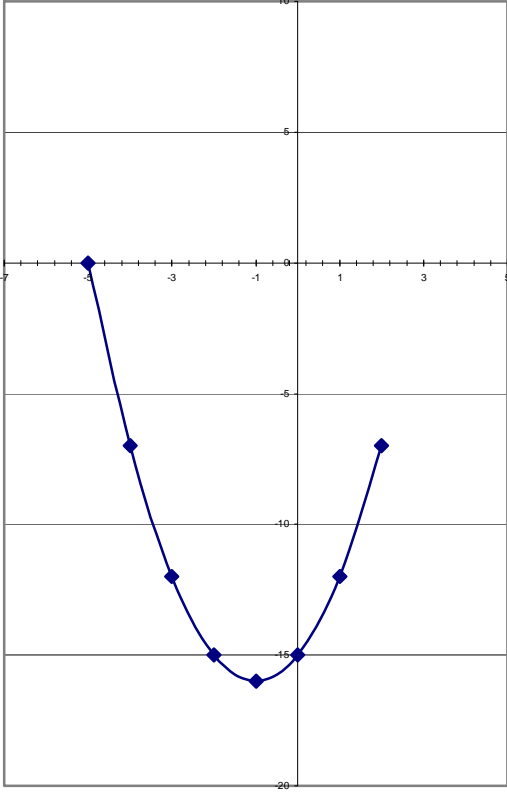
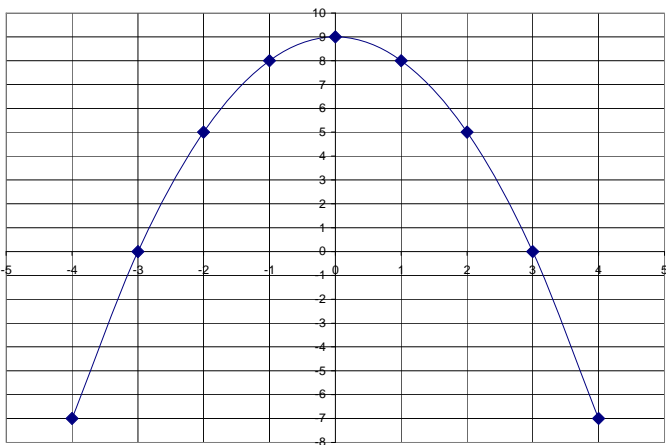


6-5 Plotting Quadratic Equations

Only two points are needed to plot a linear equation. Until the tricks are learned in future math classes, plot a minimum of seven points to see the shape of the quadratic equation.

Example: $y = x^2 + 2x - 15$ Fill in the y values for the given x value.

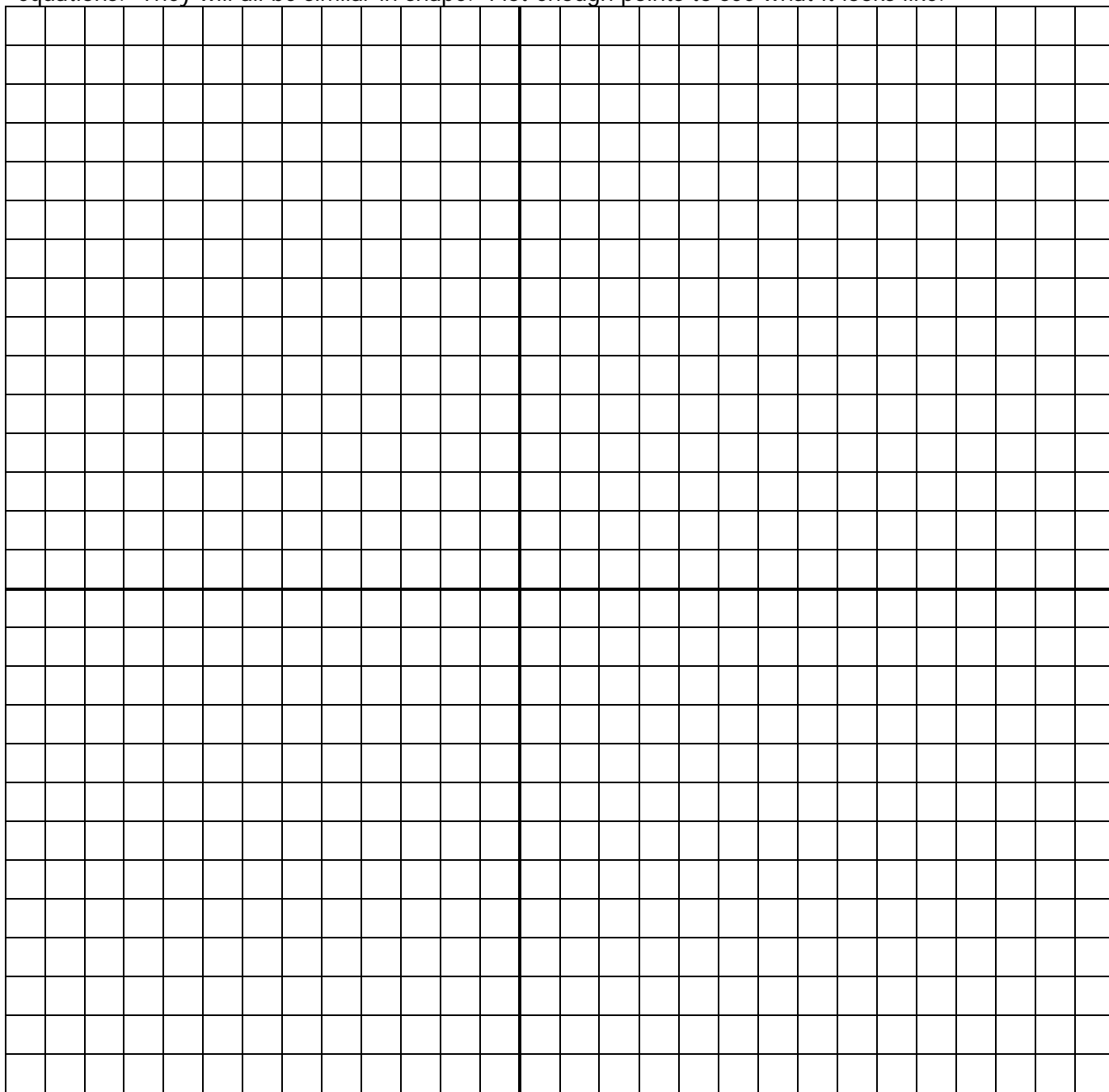
x	y	$y = x^2 + 2x - 15$	These are ordered pairs to plot on the graph. Connect the dots.
-5		$y = ()^2 + 2() - 15$	
-2		Put the x in the parenthesis.	
-1		$y = (-5)^2 + 2(-5) - 15 = 0$	
0			
1		$y = (-2)^2 + 2(-2) - 15 = -15$	
2			
3		$y = (-1)^2 + 2(-1) - 15 = -16$	
4			
		$y = (0)^2 + 2(0) - 15 = -15$	
		$y = (1)^2 + 2(1) - 15 = -12$	
		$y = (2)^2 + 2(2) - 15 = -7$	
		$y = (3)^2 + 2(3) - 15 = 0$	
		$y = (4)^2 + 2(4) - 15 = 9$	
		Here is the completed table.	
x	y		
-5	0		
-2	-15		
-1	-16		
0	-15		
1	-12		
2	-7		
3	0		
4	9		
			The more points plotted, the better it looks.



Quadratic equations make a cup shape. These can be either up or down. Another example is $y = -x^2 - 9$. Try finding the points that will result in this drawing.

Practice: Try plotting a few quadratic

equations. They will all be similar in shape. Plot enough points to see what it looks like.



- a) $y = 4x^2 - 16$
- b) $y = x^2$
- c) $y = -x^2$
- d) $y = 2x^2 + 3x - 9$