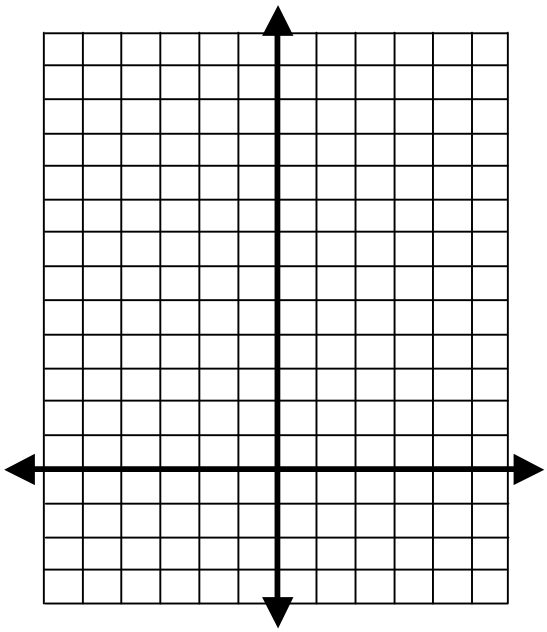
Graphing Quadratics

1. Complete the table of values and graph.

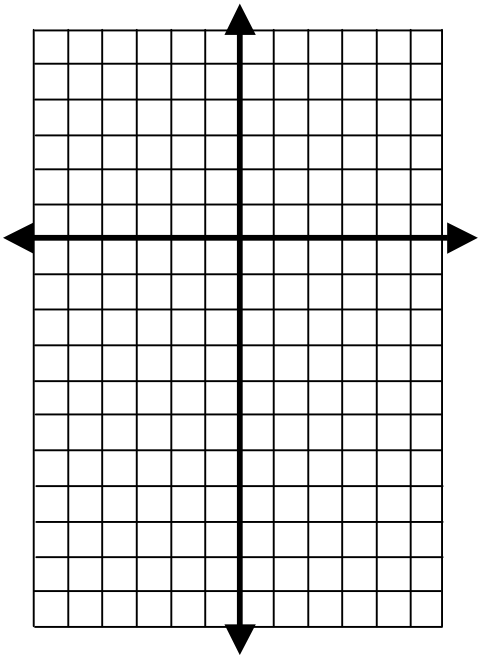
x	$y=(x)^2$	$y=\frac{1}{2}(x)^2$	$y=2x^2$
–2			
–1			
0			
1			
2			



What was the effect of multiplying $y=x^2$ by $a=\frac{1}{2}$ and $a=2$? What is the vertex of the parabolas?

2. Complete the table of values and graph.

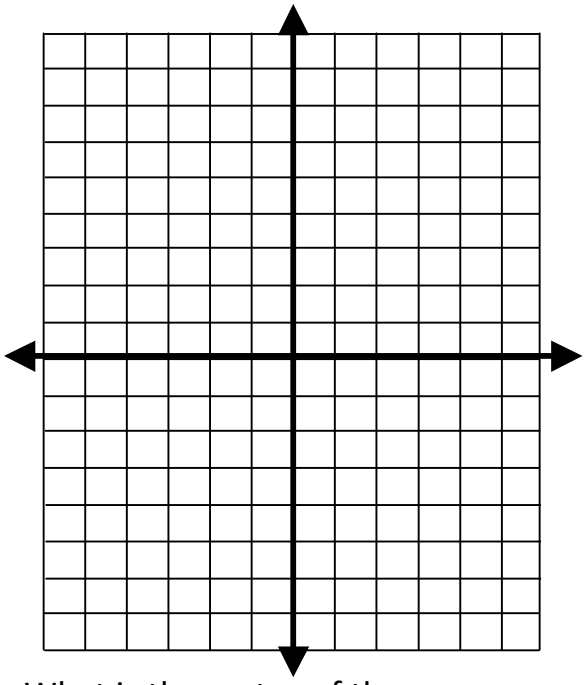
x	$y=(x)^2$	$y=-\frac{1}{2}(x)^2$	$y=-2x^2$
–2			
–1			
0			
1			
2			



What was the effect of *multiplying* $y=x^2$ by a = - $\frac{1}{2}$ and a = - 2? What is the vertex of these parabolas?

3. Complete the table of values and graph.

x	$y=(x)^2$	$y=(x)^2-4$	$y=(x)^2+3$
−2			
−1			
0			
1			
2			



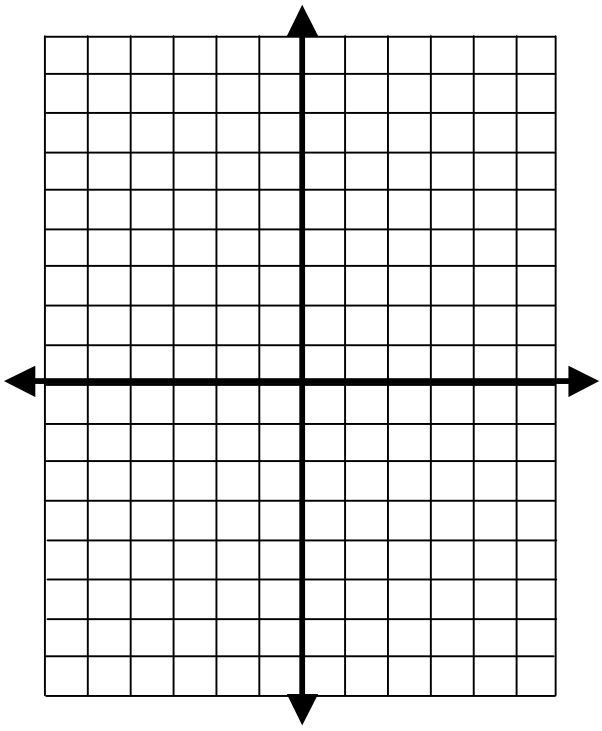
What was the effect of *adding* $k = -4$ and $k = 3$ to $y = x^2$? What is the vertex of these parabolas?

4. Complete the table of values and graph.

x	−2	−1	0	1	2
$y=(x)^2$					

x	0	1	2	3	4
$y=(x-2)^2$					

x	−5	−4	−3	−2	−1
$y=(x+3)^2$					

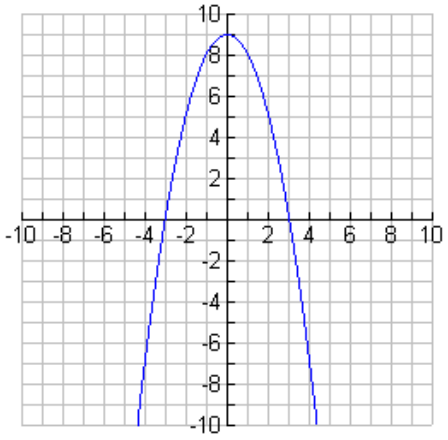


What was the effect to $y = x^2$ *by adding* $h = -2$ and $h = 3$ inside the parenthesis? What is the vertex of each parabola?

Practice A – Graphing Quadratic Functions

Write the equation of the parabolas graphed below. Use your calculator to check your answer. Verify at least 3 points.

1.



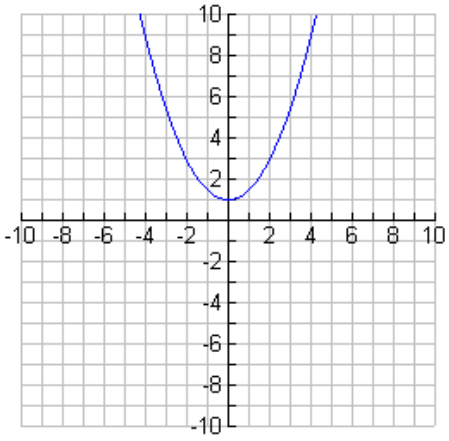
Equation: _____

Vertex: _____

Domain: _____

Range: _____

2.



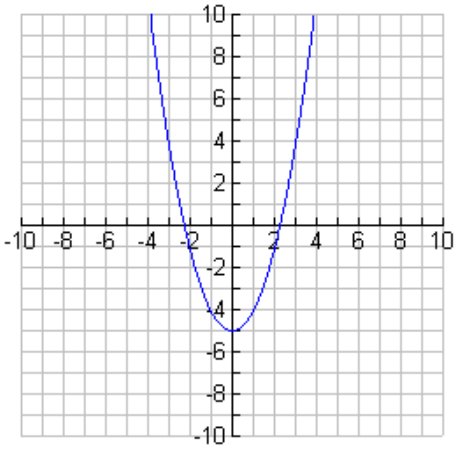
Equation: _____

Vertex: _____

Domain: _____

Range: _____

3.



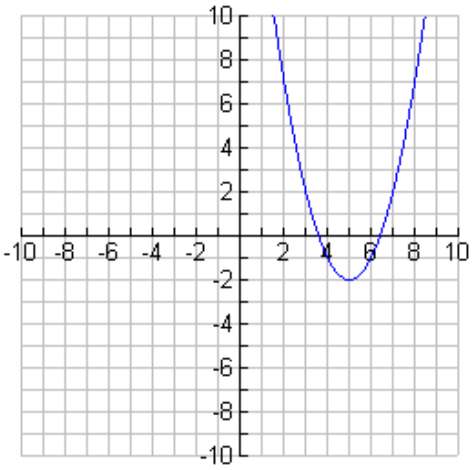
Equation: _____

Vertex: _____

Domain: _____

Range: _____

4.



Equation: _____

Vertex: _____

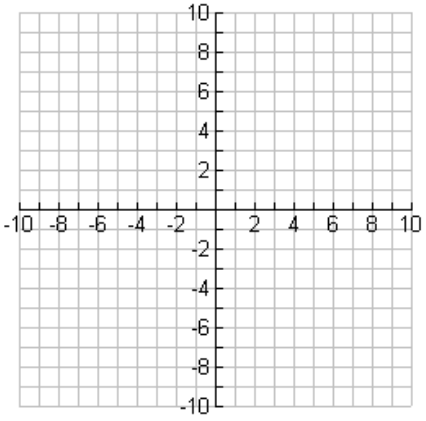
Domain: _____

Range: _____

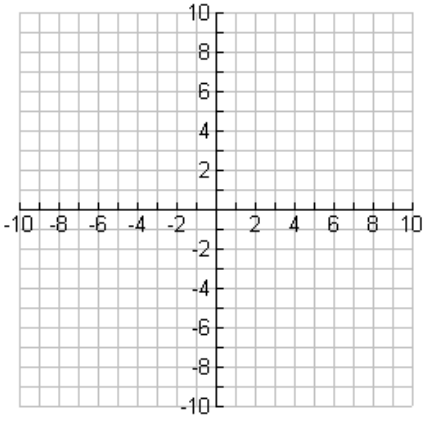
Practice B – Graphing Quadratic Functions

In the following functions, the transformations have been combined on the quadratic function that you just discovered. Graph the following functions with at least 3 precise points.

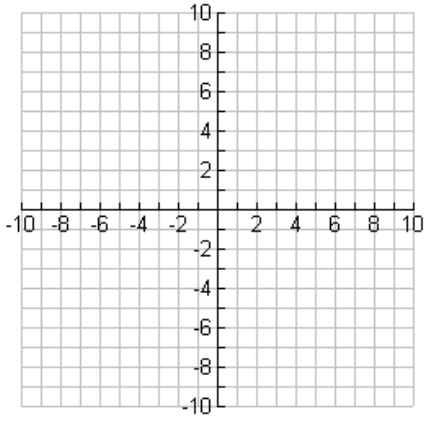
1. $f(x)=(x+2)^2-3$



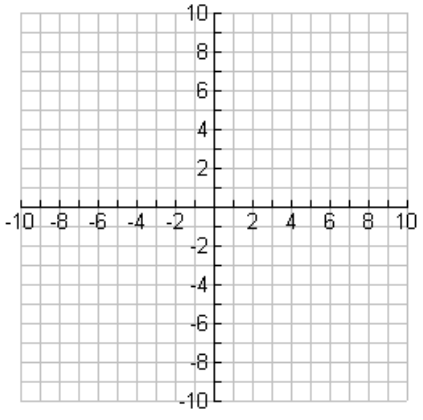
2. $f(x)=-(x-1)^2+4$



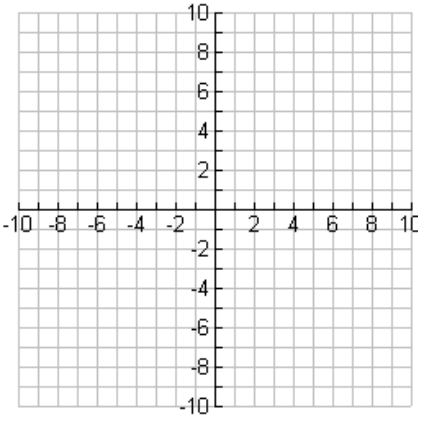
3. $f(x)=2(x-2)^2-1$



4. $f(x)=-\frac{1}{2}(x+2)^2$



5. $f(x)=3x^2-5$



6. $f(x)=-(x+3)^2+4$