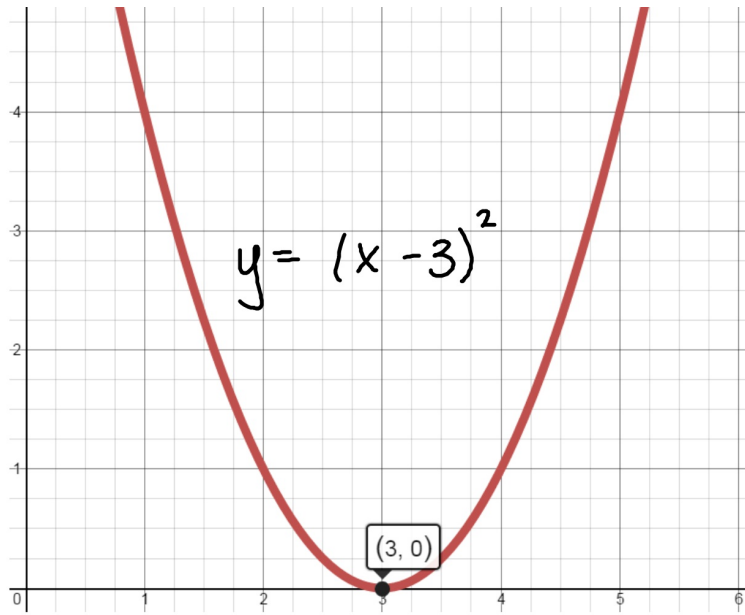
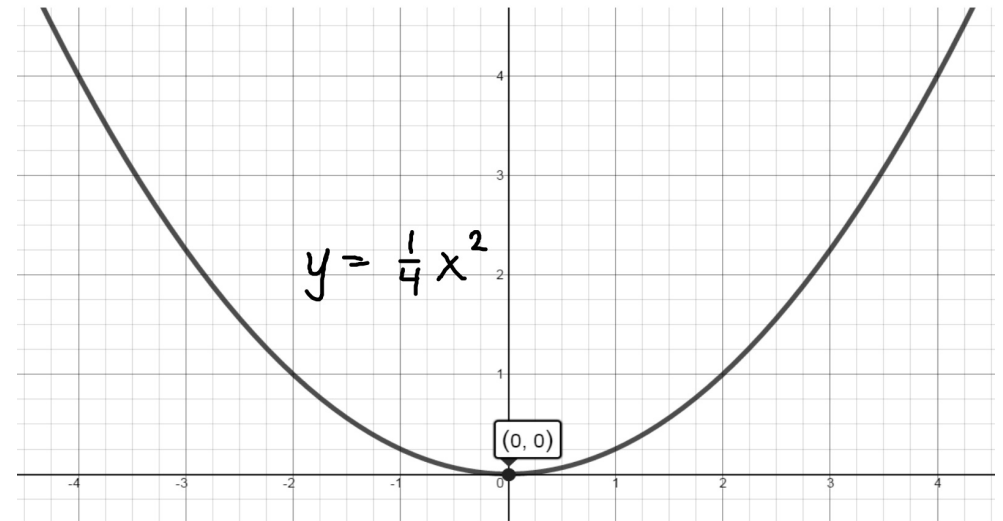


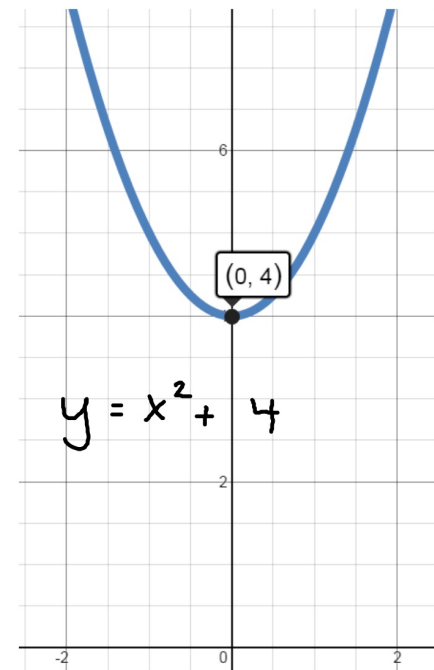
Page 1



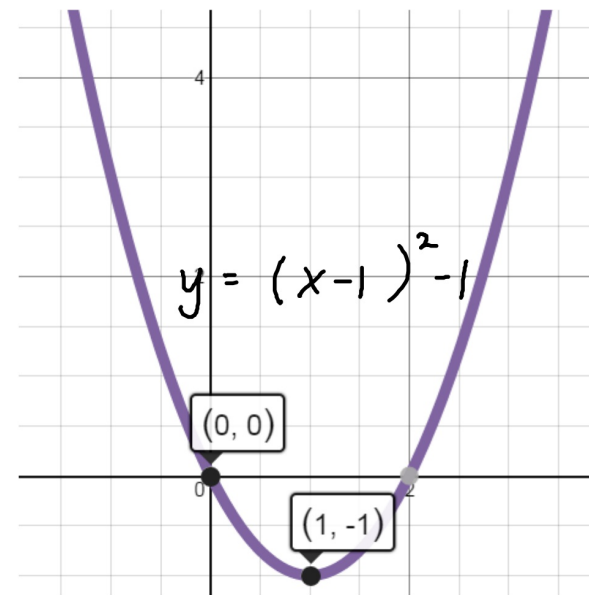
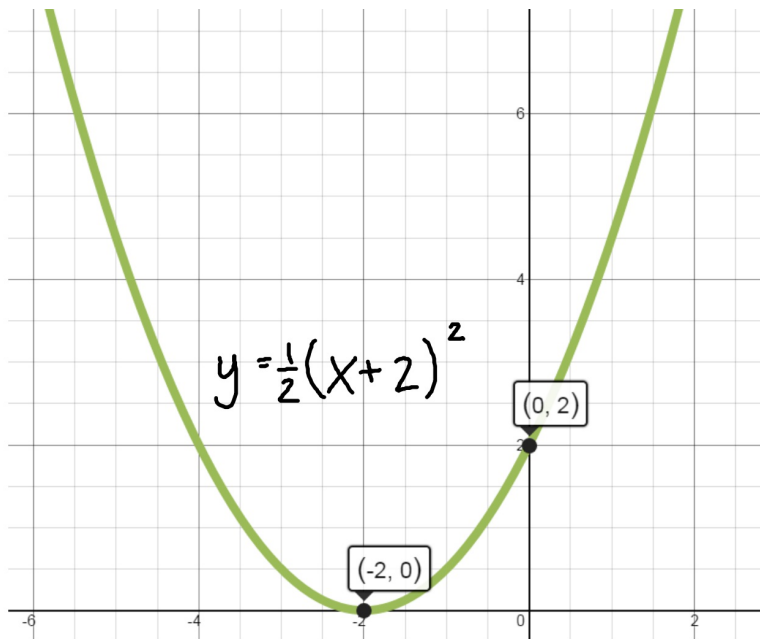
Page 3



Page 2



Page 4



Let's review vocabulary. Write down any words you DO NOT know.

Standard form of a quadratic function:  $y = ax^2 + bx + c$

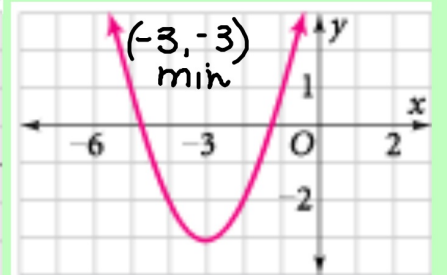
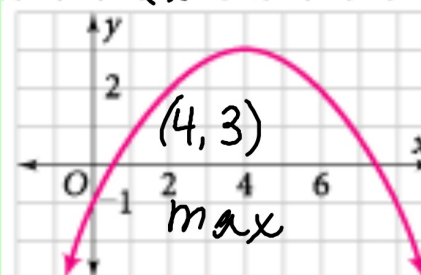
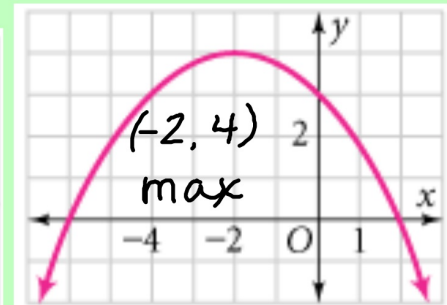
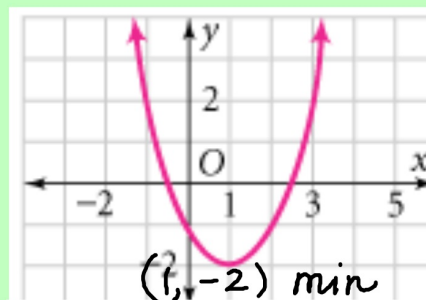
Parabola: the graph of a quadratic function; u-shaped curve

Axis of symmetry: the line that divides the parabola into two matching halves

Vertex: the highest or lowest point of a parabola

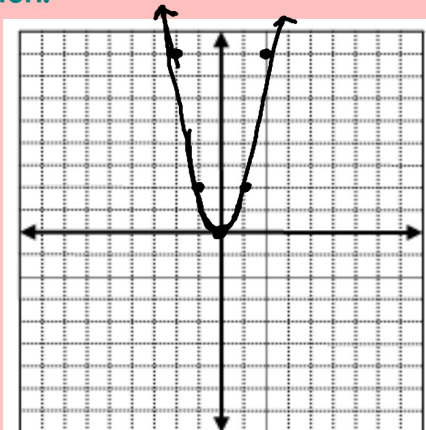
↑ maximum    ↑ minimum

Identify the vertex of each graph. Tell whether it is a maximum or a minimum.



## Graphing $y = ax^2$

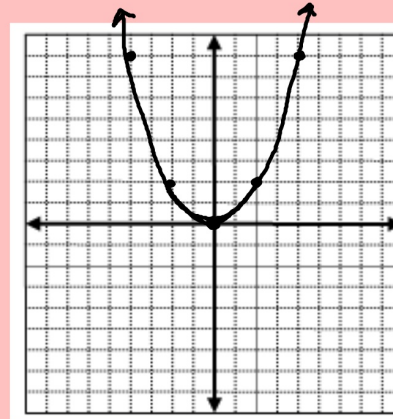
$y = ax^2 + bx + c$ : "a" always determines the shape, "a" and "b" determine the location and "c" is the y-intercept.  
 $1^2 = 1$ ...  $2^2 = 4$ ...  $3^2 = 9$ ,  $(-1)^2 = 1$ ...  $(-2)^2 = 4$ ...  $(-3)^2 = 9$ ...  
That's how we always get the symmetrical U shape.  
Multiplying by "a" afterwards determines the shape and opening direction.



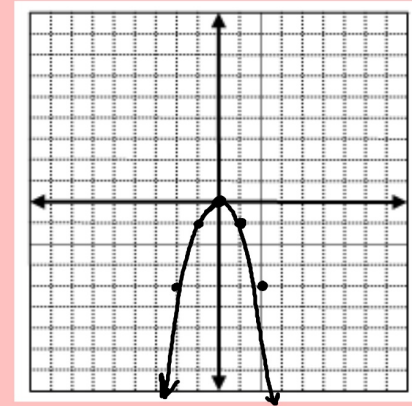
$$y = 2x^2$$

Page 9

Try  $y = \frac{1}{2}x^2$



and  $y = -x^2$

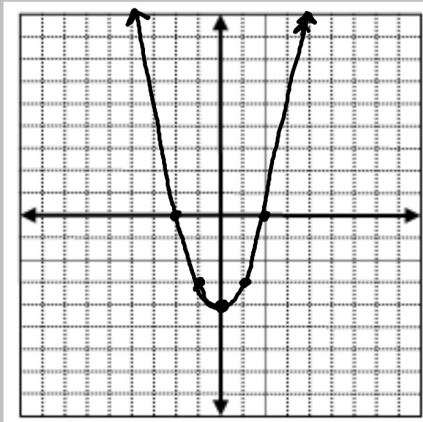


Page 10

## Graphing $y = ax^2 + c$

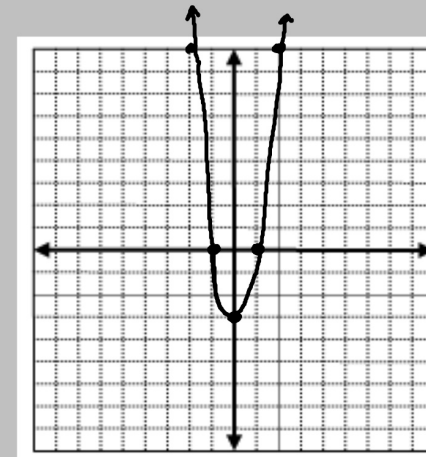
This is the same as graphing  $y = ax^2$ , except this time we have the constant "c" to move the y-intercept away from the origin.

Graph  $y = x^2 - 4$



Page 11

Graph  $y = 3x^2 - 3$



Page 12

homework  
page 513 # 1-30 skip # 20