

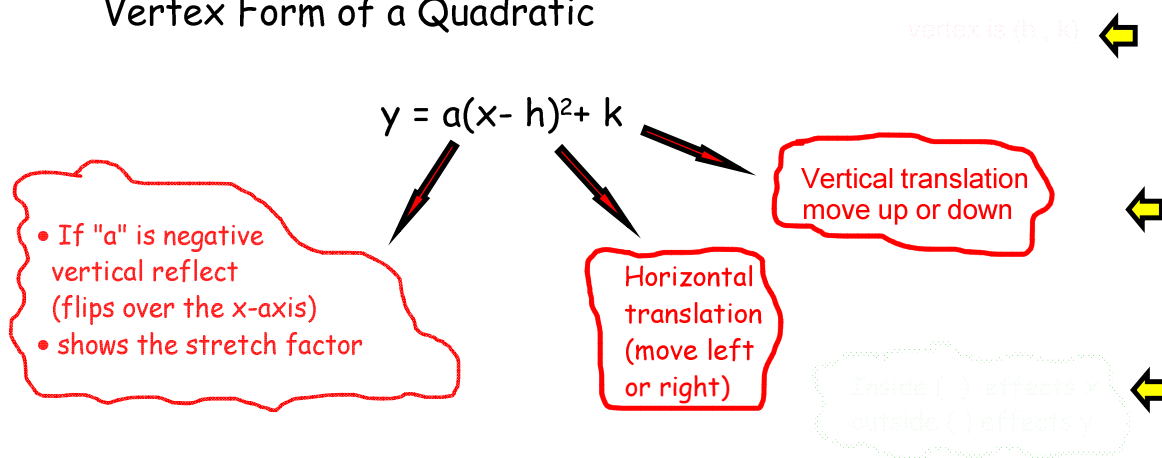
2.4B - More Graphing Quadratics in Vertex Form

$$y = a(x - h)^2 + k$$

Putting it all together

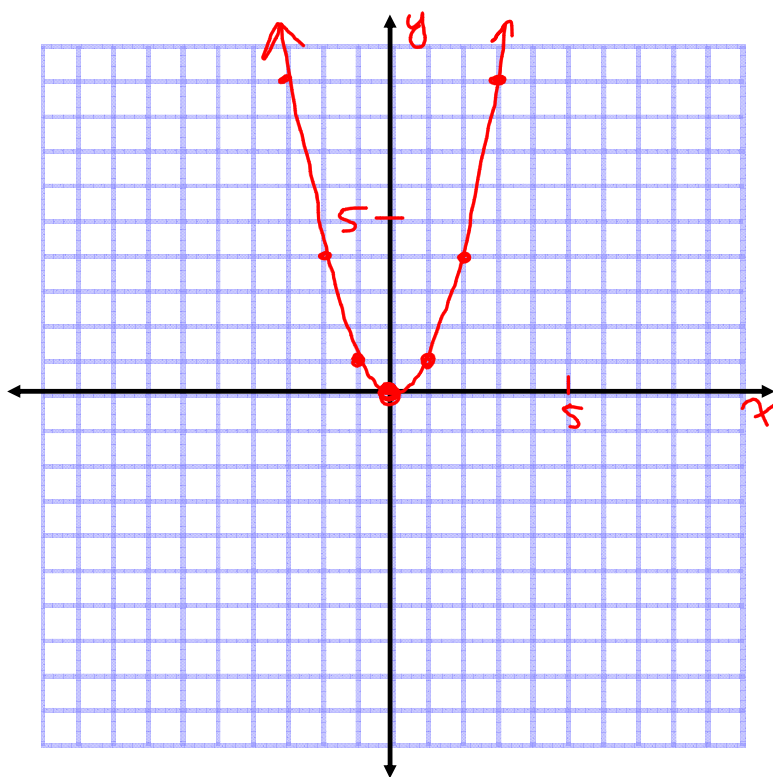
Compared to the graph in standard position $y = x^2$

Vertex Form of a Quadratic



Recall: $y = x^2$ (the standard parabola) and its 5 key points.

(We will use these key points when graphing transformations to our parabola.)

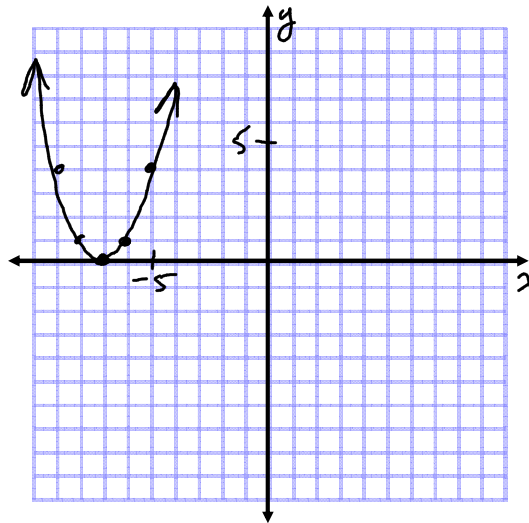


x	y
-2	4
-1	1
0	0
1	1
2	4

Graph the following. Use $y=x^2$ key points as your guide.

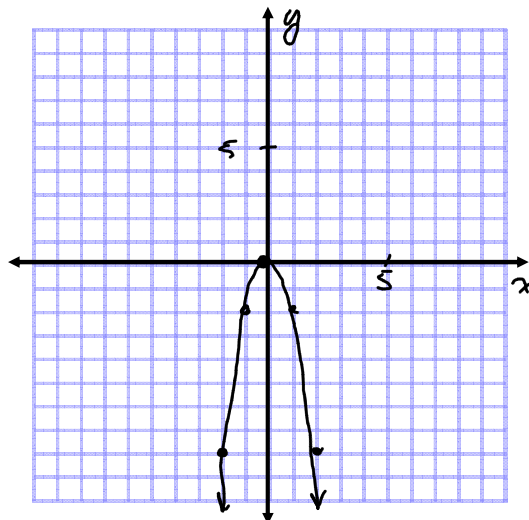
a) $Y = (x + 7)^2$

Vertex: $(-7, 0)$
 Stretch: yes or no



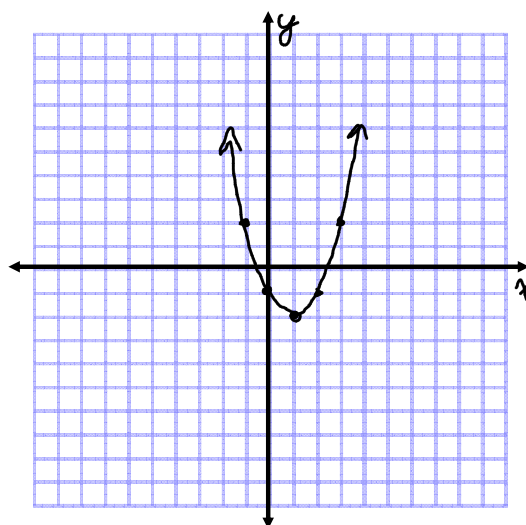
b) $Y = -2x^2$

Vertex: $(0, 0)$
 Stretch: yes or no
 -2



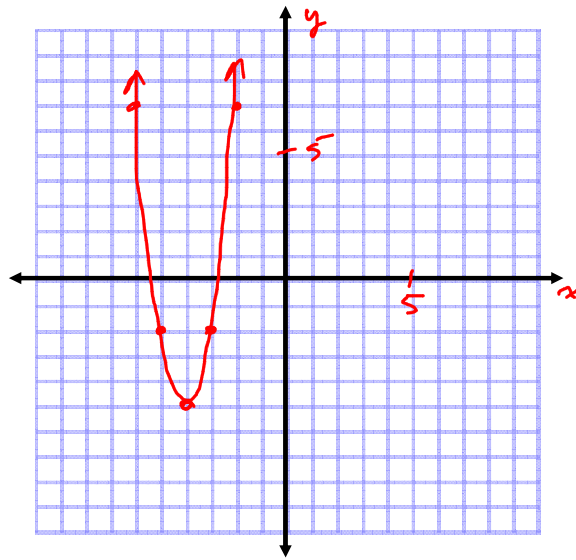
c) $Y = (x-1)^2 - 2$

$h=1$
 Vertex: $(1, -2)$
 Stretch: yes or no



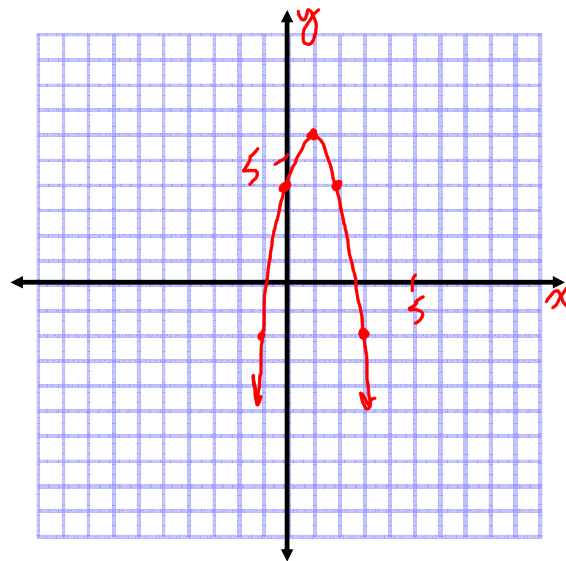
d) $Y = 3(x + 4)^2 - 5$

Vertex: $(-4, -5)$
 Stretch: yes or no



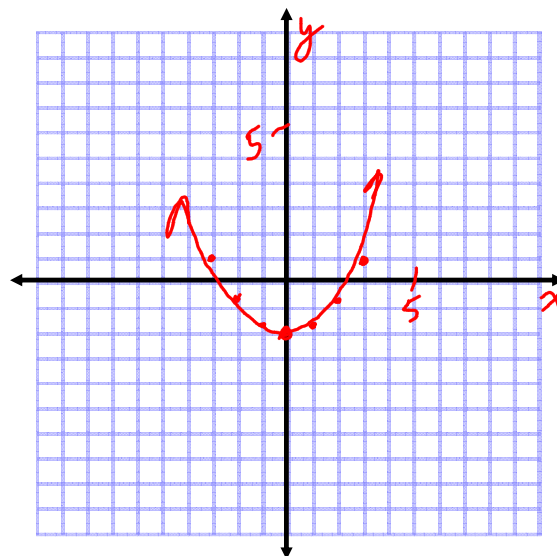
e) $Y = -2(x - 1)^2 + 6$

Vertex: $(1, 6)$
 Stretch: yes or no
 2



f) $y = \frac{1}{3}x^2 - 2$

Vertex: $(0, -2)$
 Stretch: yes or no
 $\frac{1}{3}$



Two Things to Remember:

#1

If you can't see a h or k i.e. $y = x^2$
They are still there- you just don't write them



$$y = (x - 0)^2 + 0$$

Vertex (0, 0)

#2

When Stating Transformations

Order matters

1st (multiplying operations)

- Stretching
- Reflecting

2nd (adding/subtracting operations)

- Translations (left/right; up/down)

Stretch Before you move
(or you'll hurt something :)



PRACTICE:

p.212 #1, 2a-e (do not graph)

AND

Graphing on handout 3.4B

ASSIGNMENT NEXT CLASS
ON GRAPHING!