

3.4B - More Graphing Quadratics in Vertex Form

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

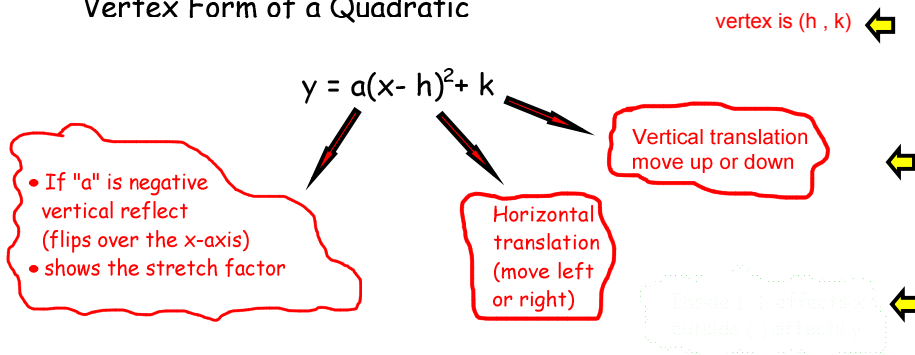
Putting it all together

Investigate

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

What did you notice from your investigation?

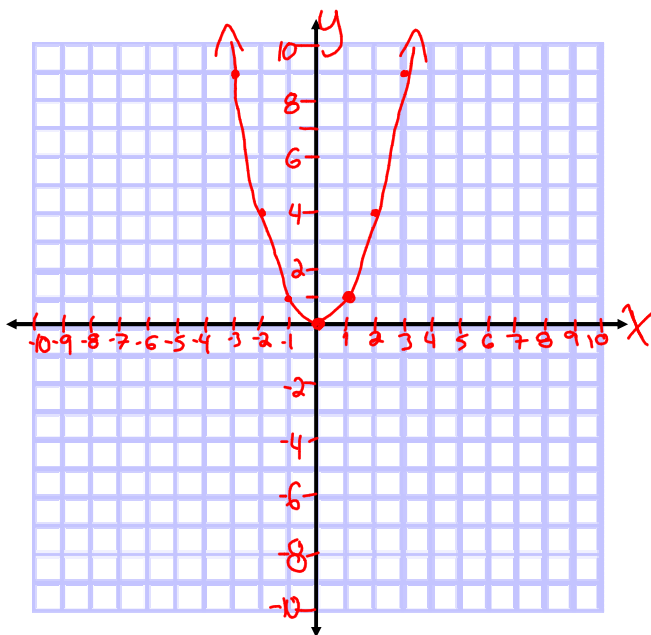
Vertex Form of a Quadratic



Oct 27-12:11 AM

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

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

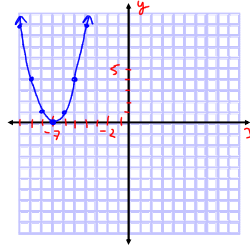


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Graph the following. Use $y=x^2$ key points as your guide.

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

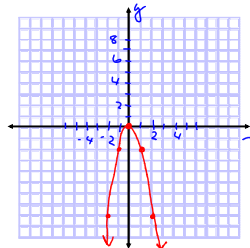
Vertex: $(-7, 0)$
Stretch: yes or no



b) $Y = -2x^2$

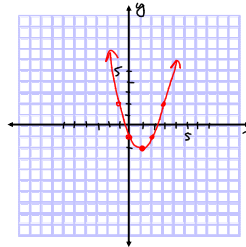
Vertex: $(0, 0)$
Stretch: yes or no

Reflection!



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

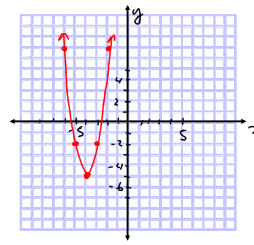
Vertex: $(1, -2)$
Stretch: yes or no



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

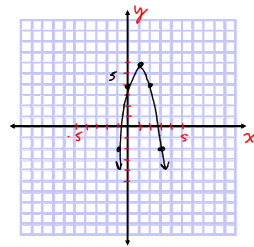
Vertex: $(-4, -5)$
Stretch: yes or no



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

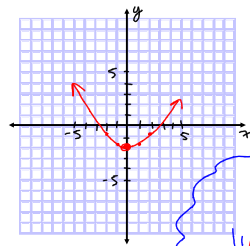
Vertex: $(1, 6)$
Stretch: yes or no

Reflection!



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

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



$\frac{4}{\frac{1}{3}} = 1.3$
 $\frac{1}{\frac{1}{3}} = 3$

Oct 27-12:16 AM

Two Things to Remember:

#1

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

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

⇒ a h k

#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 :)



Nov 7-10:22 AM

PRACTICE:

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

AND

Graphing on handout 3.4B

**ASSIGNMENT NEXT CLASS
ON GRAPHING!**

Oct 27-12:21 AM