Cycle 2 Day 2 MBF 3CI CHAPTERS 4, 5, 7: RELATIONS

Date: NOV-6/17

LEARNING TARGET:

"I can apply horizontal translations to the "mother graph" of a quadratic relation, then use the "step pattern" to graph."

Horizontal Translations of Quadratics

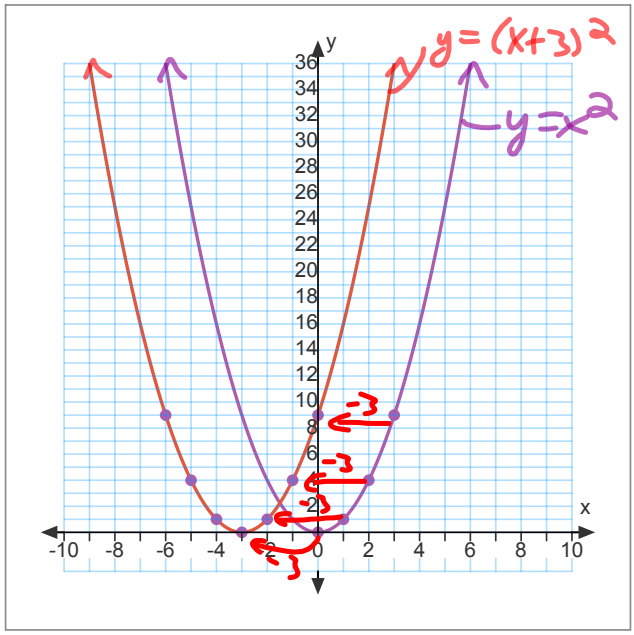
Ex.1 From last day, the "mother graph" for $y = x^2$ is given.

a) $y = x^2$

x	$y = x^2$
-5	25
-4	16
-3	9
-2	4
-1	1
0	0
1	1
2	4
3	9
4	16
5	25

b) $y = (x+3)^2$

x	$y = (x+3)^2$
-5	$(-5+3)^2 = (-2)^2 = 4$
-4	$(-4+3)^2 = (-1)^2 = 1$
-3	$(-3+3)^2 = 0$
-2	$(-2+3)^2 = 1^2 = 1$
-1	$(-1+3)^2 = 2^2 = 4$
0	$(3)^2 = 9$
1	$(1+3)^2 = 4^2 = 16$
2	$(2+3)^2 = 5^2 = 25$
3	$(3+3)^2 = 6^2 = 36$
4	$(4+3)^2 = 7^2 = 49$
5	$(5+3)^2 = 8^2 = 64$



Vertex (0 , 0) Vertex (-3 , 0)

From the vertex, the step pattern is:

	OVER	UP
	1	1
	2	4
	3	9

We will now use "step patterns" instead of a table of values.

Ex.2 In general, $y=(x-h)^2$ Vertex (h , 0)

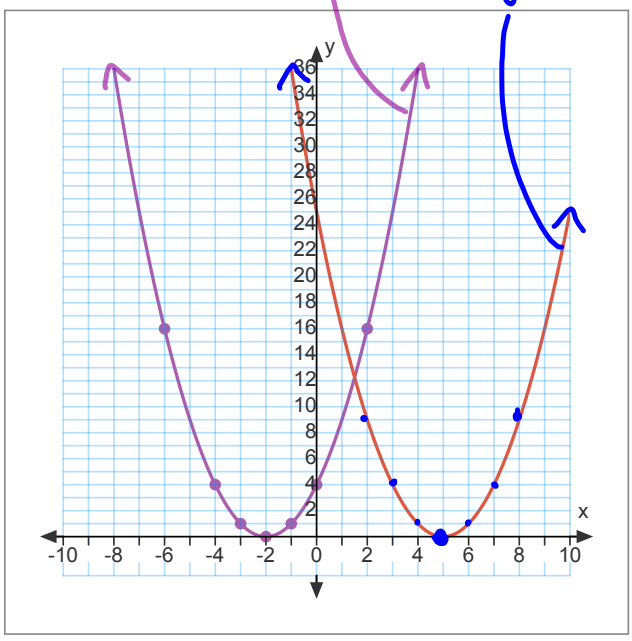
a) $y=(x+2)^2$ and b) $y=(x-5)^2$

Vertex (-2 , 0) $h=-2$ Vertex (5 , 0) $h=5$

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

$=(x+2)^2$

$y=(x+2)^2$ $y=(x-5)^2$

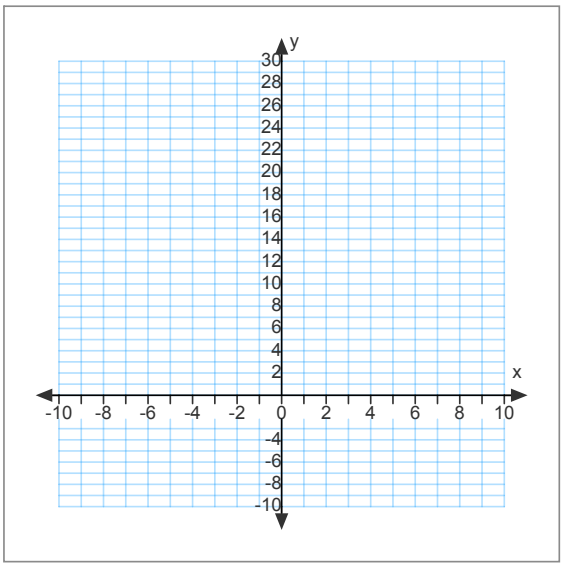


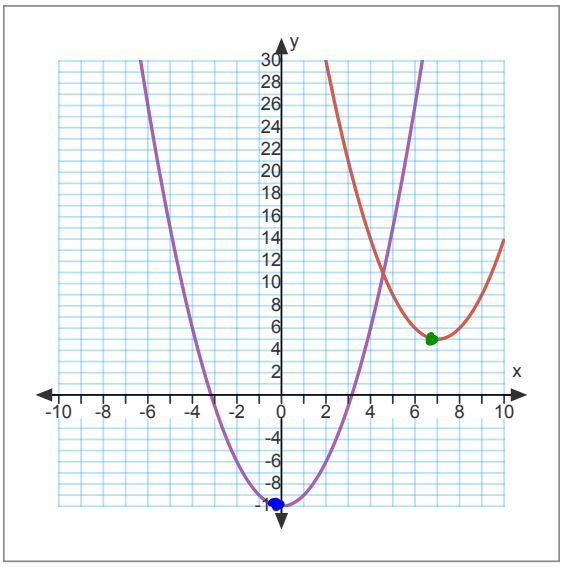
Today's Entertainment: PRACTICE

1. Graph two parabolas per grid:

a) $y=(x+6)^2$ and b) $y=(x-1)^2$ c) $y=x^2-10$ and d) $y=(x-7)^2+5$

Vertex (,) Vertex (,) Vertex (0 , -10) Vertex (7 , 5)





e) $y=(x-5)^2-3$ and f) $y=(x+7)^2+10$ g) $y=(x+4)^2-8$ and h) $y=$

Vertex (,) Vertex (,) Vertex (,) Vertex (,)