

Example 3 You Try!

$$n(x) = -3(x + 1)^2$$

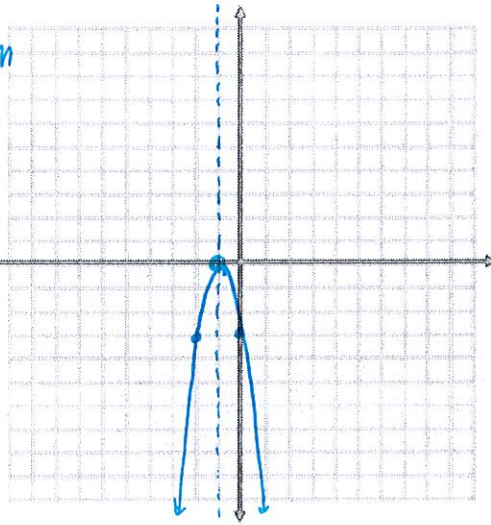
Name/Shape:
quadratic: vertex form
parabola

Horizontal Shift:
left 1

Reflection(s):
 None x-axis y-axis

Vertical Shift:
none

Dilation: |a| = 3
 None Vertical Stretch Vertical Shrink



Vertex	$(-1, 0)$
Domain	$(-\infty, \infty)$
Range	$(-\infty, 0]$
Increasing Interval	$(-\infty, 0]$
Decreasing Interval	$[0, \infty)$
Zeros	1 $(-1, 0)$
Y-intercept	$(0, -3)$
Maximum	1 $(-1, 0)$
Minimum	none
Axis of Symmetry	$x = -1$
Left End Behavior	as $x \rightarrow -\infty, y \rightarrow -\infty$
Right End Behavior	as $x \rightarrow \infty, y \rightarrow -\infty$
Even/Odd/Neither	<u>skip</u>

same

Example 4 ^{*} change "x" to POSITIVE

$$t(x) = (x - 2)^2 + 3$$

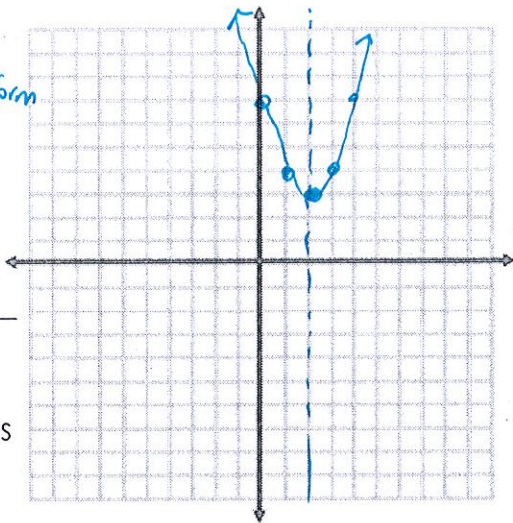
Name/Shape:
quadratic: vertex form
parabola

Horizontal Shift:
right 2

Reflection(s):
 None x-axis y-axis

Vertical Shift:
up 3

Dilation:
None Vertical Stretch Vertical Shrink



Vertex	$(2, 3)$
Domain	$(-\infty, \infty)$
Range	$[3, \infty)$
Increasing Interval	$[2, \infty)$
Decreasing Interval	$(-\infty, 2]$
Zeros	none
Y-intercept	$(0, 7)$
Maximum	none
Minimum	$(2, 3)$
Axis of Symmetry	$x = 2$
Left End Behavior	as $x \rightarrow -\infty, y \rightarrow \infty$
Right End Behavior	as $x \rightarrow \infty, y \rightarrow \infty$
Even/Odd/Neither	<u>skip</u>

same