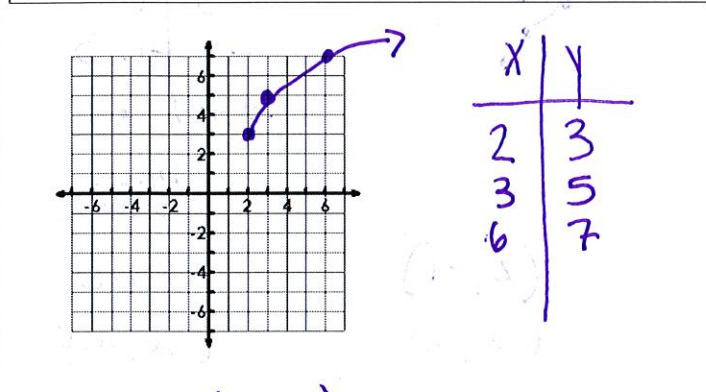


Sketch the graph and fill in the chart for each of the following. Describe the transformation beside the graph.

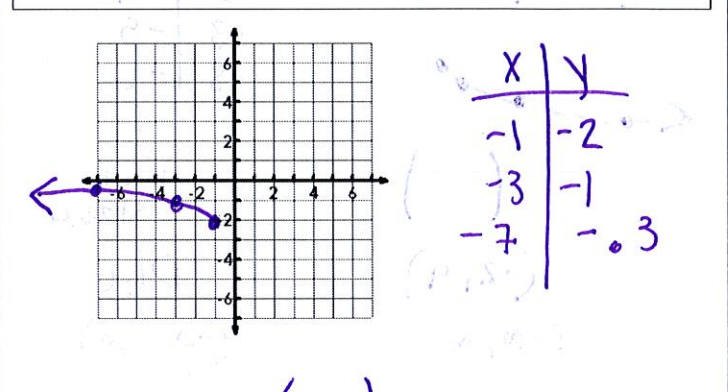
1.  $f(x) = 2\sqrt{x-2} + 3$  shoot

Starting Pt: $(2, 3)$	Inc or Dec: <b>INC</b>
Domain: $[2, \infty)$	Range: $[3, \infty)$
Abs. Max or <u>Abs Min:</u>	$(2, 3)$
End Behavior: $x \rightarrow 2, f(x) \rightarrow 3$ $x \rightarrow \infty, f(x) \rightarrow \infty$	



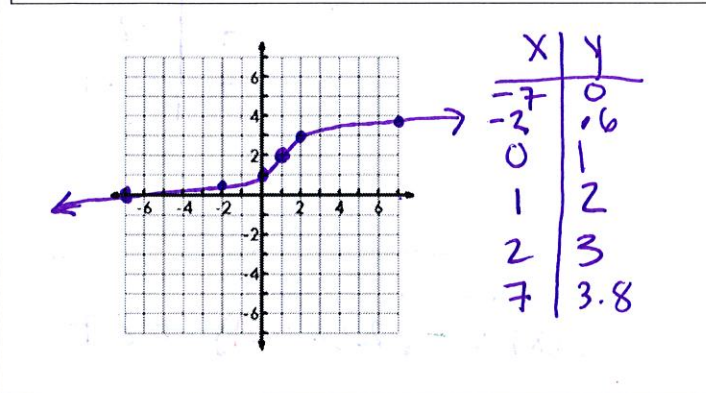
2.  $f(x) = \sqrt{-1/2(x+1)} - 2$  bouquet

Starting Pt: $(-1, -2)$	Inc or Dec: <b>DEC</b>
Domain: $(-\infty, -1]$	Range: $[-2, \infty)$
Abs. Max or <u>Abs Min:</u>	$(-1, -2)$
End Behavior: $x \rightarrow -\infty, f(x) \rightarrow \infty$ $x \rightarrow -1, f(x) \rightarrow -2$	



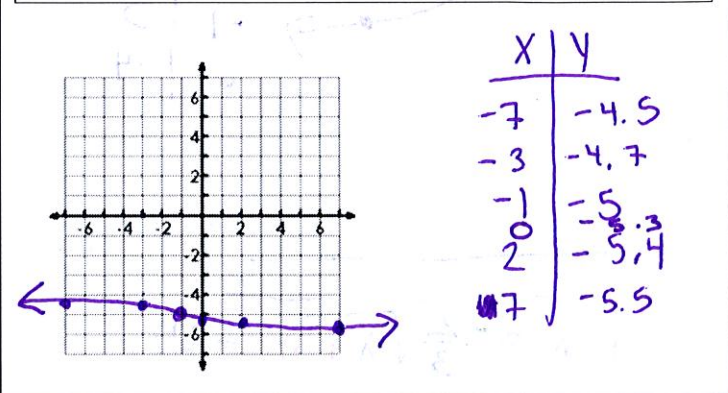
3.  $f(x) = \sqrt[3]{-(x-1)} + 2$  freestyle

Starting Pt: $(1, 2)$	Inc or Dec: <b>INC</b>
Domain: $(-\infty, \infty)$	Range: $(-\infty, \infty)$
Abs. Max or Abs Min:	<b>NONE</b>
End Behavior: $x \rightarrow -\infty, f(x) \rightarrow -\infty$ $x \rightarrow \infty, f(x) \rightarrow \infty$	



4.  $f(x) = -1/4 \sqrt[3]{x+1} - 5$  back stroke

Starting Pt: $(-1, -5)$	Inc or Dec: <b>DEC</b>
Domain: $(-\infty, \infty)$	Range: $(-\infty, \infty)$
Abs. Max or Abs Min:	<b>NONE</b>
End Behavior: $x \rightarrow -\infty, f(x) \rightarrow \infty$ $x \rightarrow \infty, f(x) \rightarrow -\infty$	



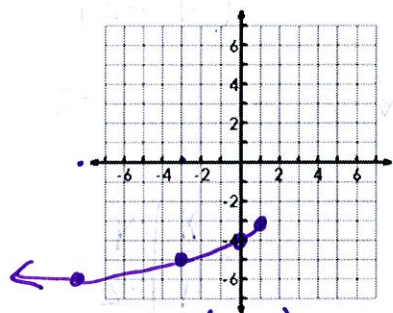
\* Use decimal points too if you need them to see what's happening on the graph!



5.  $f(x) = -\sqrt{-(x-1)} - 3$

bread  
crumbs

Starting Pt: $(1, -3)$	Inc or Dec: $INC$
Domain: $(-\infty, 1]$	Range: $(-\infty, -3]$
Abs. Max or Abs Min:	$(1, -3)$
End Behavior: $x \rightarrow -\infty, f(x) \rightarrow -\infty$ $x \rightarrow 1, f(x) \rightarrow -3$	

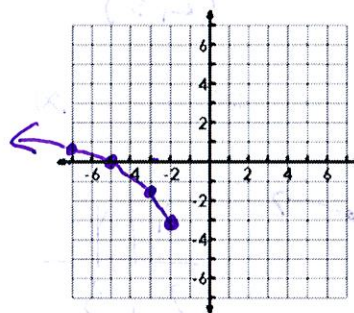


X	Y
-1	-3
0	-4
-3	-5
-8	-6

6.  $f(x) = \sqrt{-3(x+2)} - 3$

bouquet

Starting Pt: $(-2, -3)$	Inc or Dec: $DEC$
Domain: $(-\infty, -2]$	Range: $[-3, \infty)$
Abs. Max or Abs Min:	$(-2, -3)$
End Behavior: $x \rightarrow -\infty, f(x) \rightarrow \infty$ $x \rightarrow -2, f(x) \rightarrow -3$	

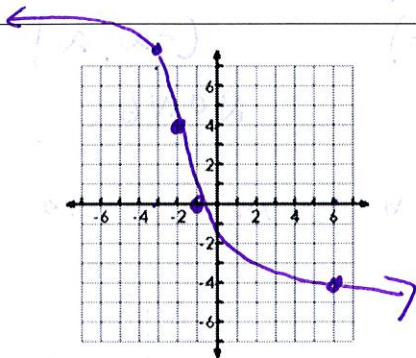


X	Y
-2	-3
-5	0
-3	-1.3
-7	.9

7.  $f(x) = -4\sqrt[3]{x+2} + 4$

back  
stroke

Starting Pt: $(-2, 4)$	Inc or Dec: $DEC$
Domain: $(-\infty, \infty)$	Range: $(-\infty, \infty)$
Abs. Max or Abs Min:	$NONE$
End Behavior: $x \rightarrow -\infty, f(x) \rightarrow \infty$ $x \rightarrow \infty, f(x) \rightarrow -\infty$	

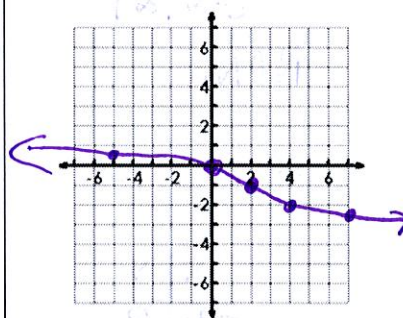


X	Y
-3	8
-2	4
-1	0
6	-4

8.  $f(x) = \sqrt[3]{-1/2(x-2)} - 1$

back  
stroke

Starting Pt: $(2, -1)$	Inc or Dec: $DEC$
Domain: $(-\infty, \infty)$	Range: $(-\infty, \infty)$
Abs. Max or Abs Min:	$NONE$
End Behavior: $x \rightarrow -\infty, f(x) \rightarrow \infty$ $x \rightarrow \infty, f(x) \rightarrow -\infty$	



X	Y
-5	.5
0	0
2	-1
4	-2
7	-2.4

Write the equation of the radical with the given transformations.

9. Compressed vertically by 2/3, reflected over the x-axis, left 31, and down 24.

$$f(x) = -\frac{2}{3}\sqrt{x+31} - 24$$

10. Stretched horizontally by 1/2, reflected over the x-axis, right 29, and up 87.

$$f(x) = -\sqrt{2(x-29)} + 87$$

\* make sure you put ( ) around the ( ) in the table, otherwise it will change your starting point!