

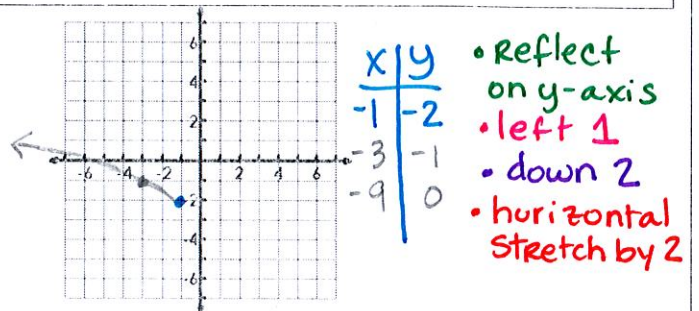
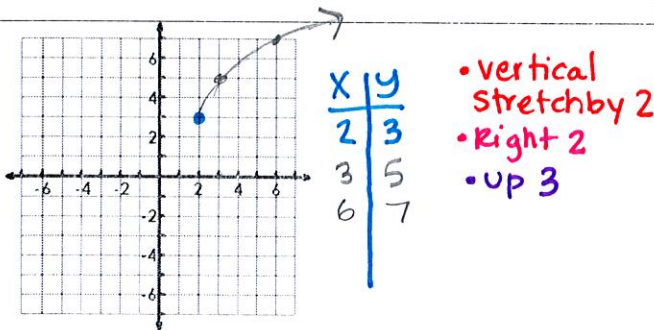
Sketch the graph and fill in the chart for each. Make a chart of your points by each graph.

1.  $f(x) = 2\sqrt{x-2} + 3$  "Shoot" Basketball  
 opp same

2.  $f(x) = \sqrt{-\frac{1}{2}(x+1)} - 2$  "Shoot" Basketball  
 opp same

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

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

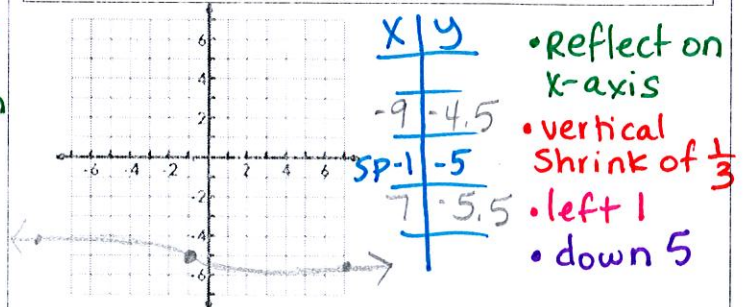
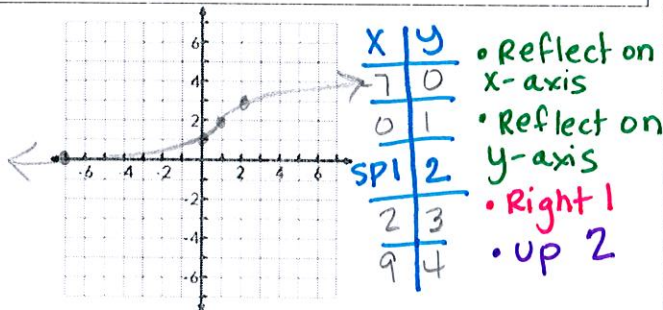


3.  $f(x) = -\sqrt[3]{-(x-1)} + 2$  "Free Style" Swim  
 opp same

4.  $f(x) = -\frac{1}{4}\sqrt[3]{x+1} - 5$  "Free Style" Swim  
 opp same

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

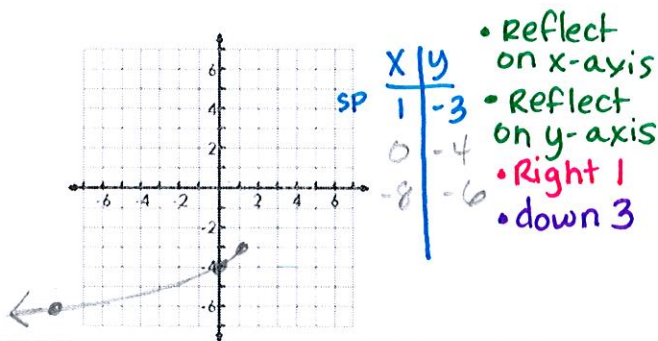
Starting Pt: $(-1, -5)$	Inc or Dec: decreasing
Domain: $(-\infty, \infty)$	Range: $(-\infty, \infty)$
Abs. Max or Abs Min: none	
End Behavior: $x \rightarrow -\infty, f(x) \rightarrow \infty$ $x \rightarrow \infty, f(x) \rightarrow -\infty$	





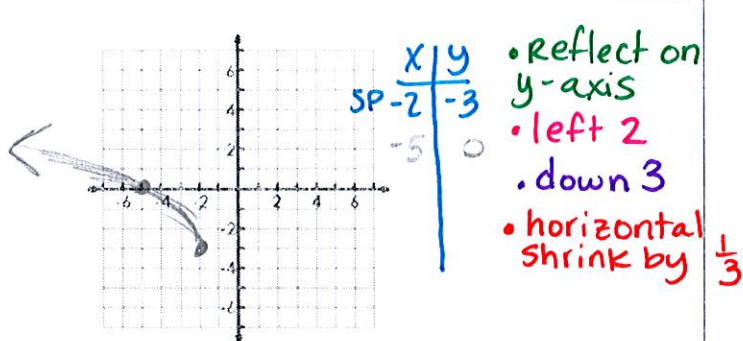
5.  $f(x) = -\sqrt{-(x-1)} - 3$  "Shoot" Basketball  
opp same

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



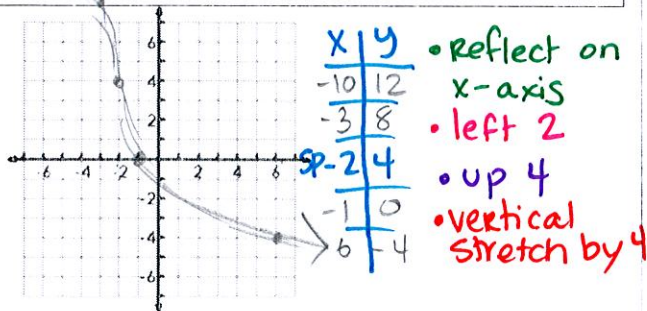
6.  $f(x) = \sqrt{-3(x+2)} - 3$  "Shoot" Basketball  
opp same

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



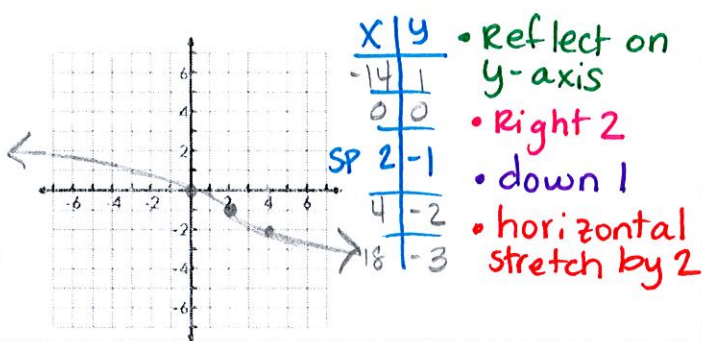
7.  $f(x) = -4\sqrt[3]{x+2} + 4$  "Free Style" Swim  
opp same

Starting Pt: $(-2, 4)$	Inc or Dec: <b>Decreasing</b>
Domain: $(-\infty, \infty)$	Range: $(-\infty, \infty)$
Abs. Max or Abs Min: <b>none</b>	
End Behavior: $x \rightarrow -\infty, f(x) \rightarrow \infty$ $x \rightarrow \infty, f(x) \rightarrow -\infty$	



8.  $f(x) = \sqrt[3]{-\frac{1}{2}(x-2)} - 1$  "Free Style" Swim  
opp same

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



Write the equation of the radical with the given transformations.

9. Compressed vertically by  $\frac{2}{3}$ , reflected over the x-axis, left 31, and down 24.  
outside outside  
inside outside

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

OR

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

10. Compressed horizontally by  $\frac{1}{2}$ , reflected over the x-axis, right 29, and up 87.  
inside outside  
inside outside

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

OR

$$h(x) = -\sqrt[3]{2(x-29)} + 87$$