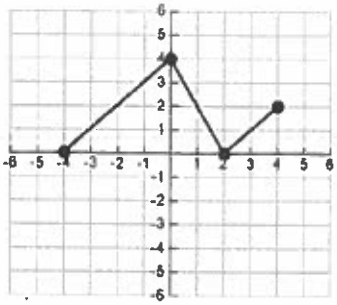
Name: Selected Answers Date: _____

Homework: Graph Using Transformations **Honors PreCalculus**

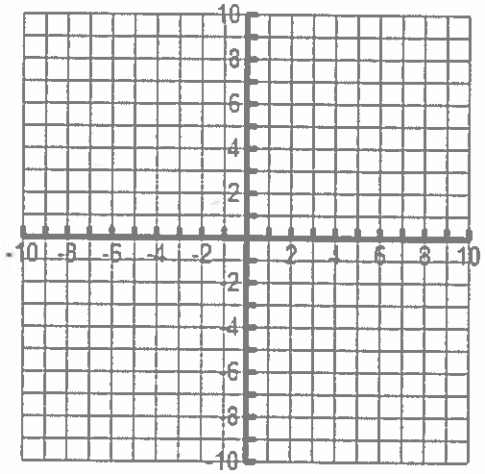
The graph of f(x) is given. Sketch the graphs of the following functions. Be sure to sketch each labeled graph on its own coordinate plane. (So you should have 6 graphs in all) Describe the transformations in words and give the domain and range of your final graph.



1. $y = f(x-2)+1$

right 2
up 1

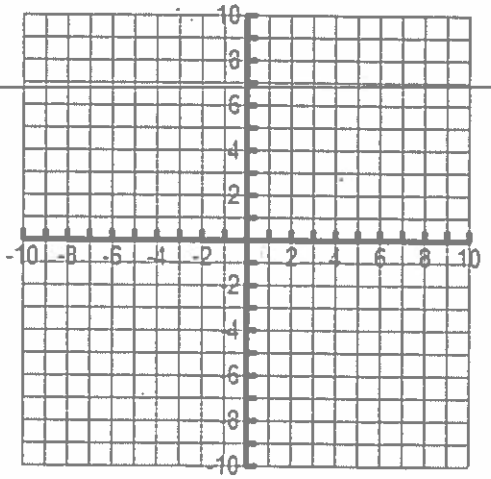
D: [-2, 6]
R: [1, 5]



2. $y = 2f(-x-3)$ → $y = 2f(-(x+3))$

vertical stretch by 2
reflection over y-axis
left 3

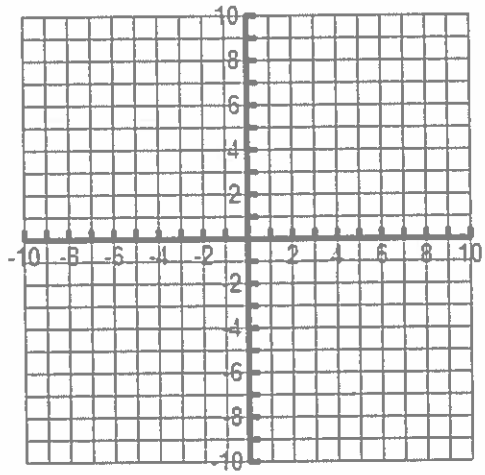
D: [-7, 1]
R: [0, 8]



3. $y = -f(2x) - 4$

reflection over x-axis
horizontal shrink by $\frac{1}{2}$
down 4

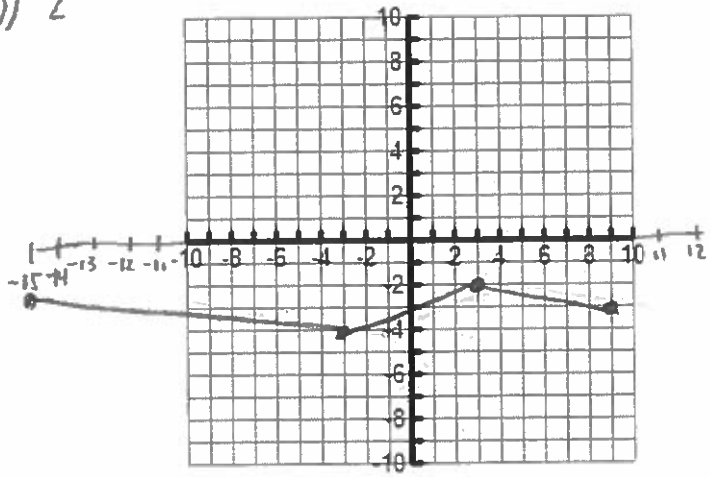
D: [-2,2]
R: [-8,-4]



4. $y = -\frac{1}{2}f\left(\frac{1}{3}x + 1\right) - 2 \rightarrow y = -\frac{1}{2}f\left(\frac{1}{3}(x+3)\right) - 2$

reflection over x-axis
vertical shrink by $\frac{1}{2}$
horizontal stretch by 3
left 3
down 2

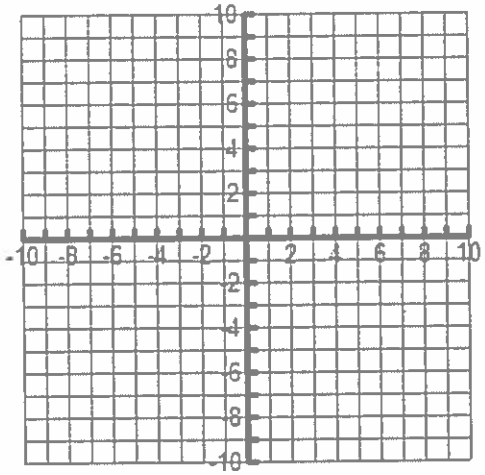
D: [-15,9]
R: [-4,-2]



5. $y = \frac{1}{2}f(-x) + 2$

Vertical shrink by $\frac{1}{2}$
reflection over y-axis
up 2

D: [-4,4]
R: [2,4]



Page 115 Problem 85 (Just explain, do not graph)