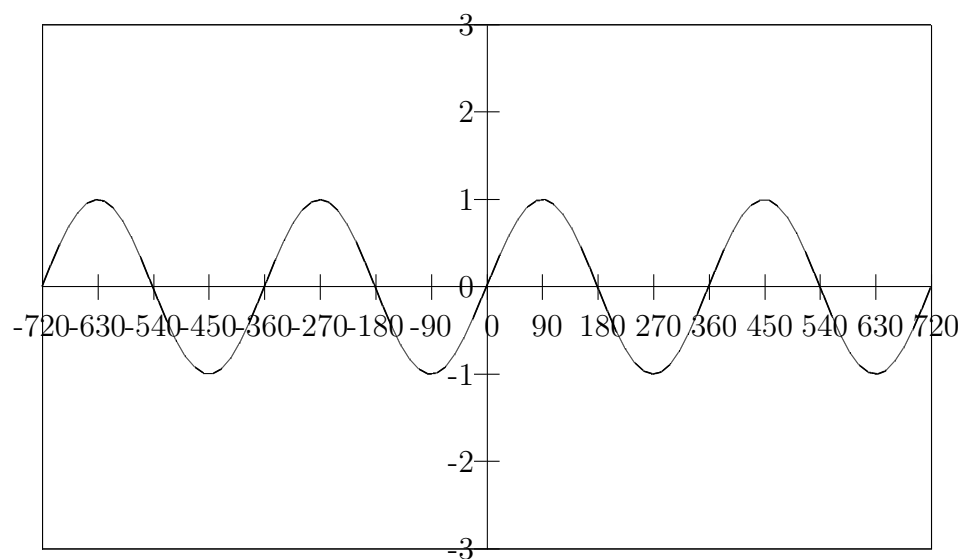


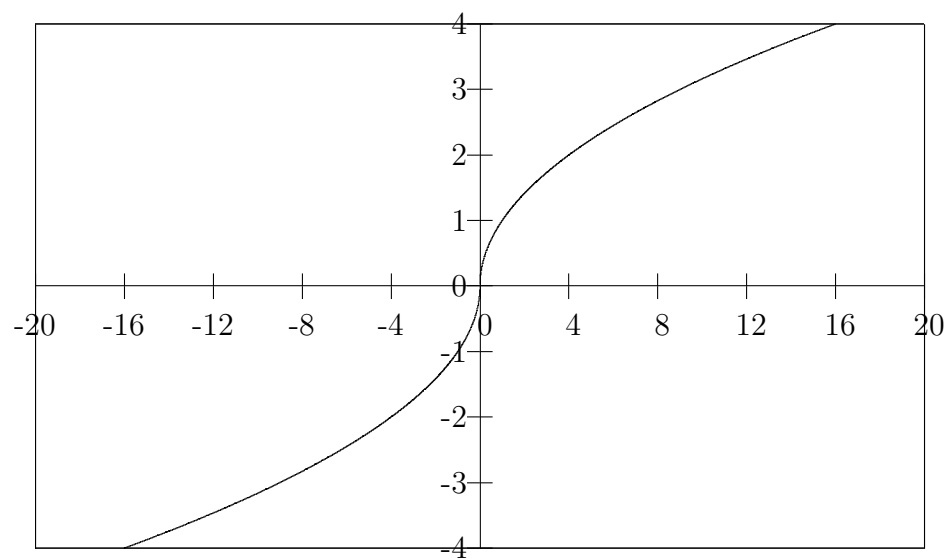
Homework for Tuesday.  
Mr. Neeman, 10A. October 14, 2011

#1. For each of the functions graphed below, state whether or not it's injective, whether or not it's surjective, and whether or not it's bijective. Assume in all cases that the codomain is  $\mathbb{R}$  and that function keeps going on both sides.

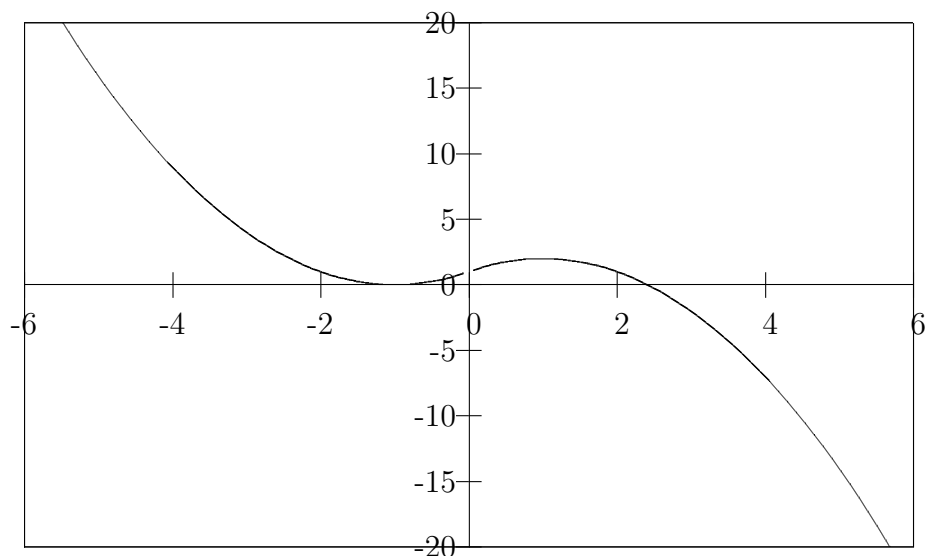
(a)



(b)



(c)



#2. Based on the practice you've done sketching graphs on transformations, match each of the following transformations of  $f(x)$  to the corresponding description of what this transformation does to the graph (for example, (1) corresponds to (g)):

- |                      |  |
|----------------------|--|
| (1) $f(x) + 2$       | (a) $f(x)$ stretched horizontally around the $y$ axis by a factor of 2.  |
| (2) $f(2x)$          | (b) $f(x)$ reflected around the $x$ axis.                                |
| (3) $f(x - 2)$       | (c) $f(x)$ stretched vertically around the $x$ axis by a factor of 2.    |
| (4) $f(-x)$          | (d) $f(x)$ compressed horizontally around the $y$ axis by a factor of 2. |
| (5) $-f(x)$          | (e) $f(x)$ translated down by 2.   |
| (6) $2f(x)$          | (f) $f(x)$ translated to the right by 2.                                 |
| (7) $f(\frac{x}{2})$ | (g) $f(x)$ translated up by 2.   |
| (8) $f(x) - 2$       | (h) $f(x)$ reflected around the $y$ axis.                                |