Transformations of Functions
Math 220 Spring '09

Figure 1: The graph of the function \( f(x) = x^3 - 3x + 1 \).

Figure 2: \( f(x - 2) \) on the left and \( f(x + 2) \) on the right.
Notice that $f(cx)$ “squishes” the graph when $c > 1$ and stretches the graph when $0 < c < 1$. If $c < 0$, we take the graph of $f(|c|x)$ and reflect it across the $y$-axis.

Similarly for $c < 0$ to graph $cf(x)$, we take the graph of $|c|f(x)$ and reflect it across the $x$-axis.
Figure 5: $f(-2x)$ on the left and $f(2x)$ on the right.