1. Let $f(x) = 3x^2$
   (a) Find the average value of this function on the interval $[-1, 1]$
   (b) Find all $c$ in this interval such that $f(c)$ equals to this average value.

2. Find the area of the region below the graph of $f(x) = \frac{1}{x^2}$ between $x = 1$ and $x = 2$. 
3. Find the area of the region bounded by the graphs of $y = 2x$ and $y = x^2$. 