1. Find the area of the region that is above the graph of $y = 2x^2$ and below the graph of $y = -5x + 3$.

2. Recall that we cannot find an antiderivative for $f(x) = \sin(x^2)$ to evaluate $\mathcal{I} = \int_0^1 \sin(x^2)\, dx$.
   There are a couple of ways we can approximate $\mathcal{I}$.

   (a) Plot $y = f(x)$, and calculate L_{10} and R_{10}.
   Will L_{10} overestimate or underestimate $\mathcal{I}$? How about R_{10}?
   How accurate is your approximation to the exact value of $\mathcal{I}$?

   (b) Find the Taylor Polynomial of degree 7 for $\sin(x)$.
   (You can also check your notes from March 9).
   Use this to find a Taylor polynomial for $f(x)$.
   Substitute this Taylor polynomial into the integral and evaluate to approximate $\mathcal{I}$.