1. Let $f(x) = \sqrt[6]{x} - 2\sin(x) + x^4 - 7x^2 - \frac{1}{x} + 5$. Notice $f(x)$ is only defined for $x > 0$

   (a) Find $f'(x)$

   (b) Find an antiderivative of $f(x)$

   (c) Verify your answers by graphing all three functions on the same set of axes

2. Let $g(x) = x^2 \sin(x)$

   (a) What do you think $g'(x)$ is?

   (b) Check your answer by graphing $g(x)$ and your answer to (a) on the same set of axes

3. Let $h(x) = \sin(x^2)$

   (a) What do you think $h'(x)$ is?

   (b) Check your answer by graphing $h(x)$ and your answer to (a) on the same set of axes