Work on these with your partner(s) at the board

1. Let $f(x) = \sqrt[4]{x} - 2\sin(x) + x^4 - 7x^2 - \frac{1}{x} + 5$. 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