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

1. For each function, find *all* antiderivatives
   (a) $f(x) = x^3 + \sec(x)^2 + 7$
   (b) $g(x) = \ln(x) + \tan(x)$ *Hint: Oct 5 #1(d) & Oct 7 #8 in-class work*
   (c) $h(x) = \pi + \frac{1}{x^2} - e^{\cos(x)} \sin(x)$

2. Let $f(x) = 2x^2 + \frac{1}{\sqrt{x}}$.
   (a) Find all antiderivatives of $f(x)$.
   (b) Find the antiderivative $F(x)$ of $f(x)$ where $F(4) = 17$

3. Let $f(x) = 2\sin(x)\cos(x)$
   (a) Show that $F(x) = \sin(x)^2$ is an antiderivative of $f(x)$ by calculating $F'(x)$
   (b) Show that $G(x) = -\cos(x)^2$ is an antiderivative of $f(x)$ by calculating $G'(x)$
   (c) Huh. I thought all antiderivatives of $f(x)$ differ by a constant. Explain