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

1. Find the derivative of each function

(a) $f(x) = \tan(\sqrt{x^2+1})$

(b) $f(x) = \cos(\sec(x)+1)$

(c) $f(x) = \sec(x^2+3x)$

(d) $f(x) = e^{x^2}\sin(x)$

(e) $f(x) = e^{5x}\sqrt{3-\ln(x)}$

(f) $f(x) = 3^{\sqrt{\sin(x)}}$

2. Find an antiderivative of each function

(a) $f(x) = 3x^2\cos(x^3)$ *Hint: Think of undoing the Chain Rule*

(b) $g(x) = 2x\cos(e^x) - x^2\sin(e^x)e^x$ *Hint: Think of undoing Product Rule & Chain Rule*