MTH 251
LAB §3.6

DAMIEN ADAMS

1. Evaluate $\arctan(1)$.
2. Evaluate $\arcsin(1)$.
3. Evaluate $\arctan(-1)$.
4. Recall the strategy we used in class to find the derivative of $\arcsin x$. Use that same strategy to show that the derivative of $\arctan x$ is $\frac{1}{1+x^2}$.
5. Find $f'(x)$ if $f(x) = \arctan(x^2 + 1)$.
6. Find $\frac{d}{dx}\left(\sqrt[3]{e^x \arctan(x) + 1}\right)$.
7. Find an equation of the line tangent to the curve $y = \arcsin(1 - \sqrt{x})$ at the point $(1, 0)$.
8. Find $f'(\theta)$ if $f(\theta) = \arctan(\arcsin(\theta + 1))$.