MTH 251
LAB §3.2

DAMIEN ADAMS

1. Find $\dfrac{d}{dy}\left(ye^{y}\right)$

2. Find $f'(y)$ if $f(y) = 2y^2 e^y$

3. Find $\frac{d}{dx}\left(e^x \sqrt[4]{x^3}\right)$

4. Find y' if $y = 5\sqrt[5]{t^3}e^t - t^2$

5. Find $\dfrac{dy}{dx}$ if $y = \dfrac{x^2 + x + 1}{2x - 1}$

6. Find $\dfrac{dy}{dx}$ if $y = \dfrac{7e^x}{2 - x^2}$

7. Find $g'(t)$ if $g(t) = \dfrac{t^2 - t}{\sqrt{t}}$

8. Find $\frac{d}{dx}\left(\dfrac{2xe^x}{\sqrt[3]{x}}\right)$

9. The curve $y = \dfrac{1}{1 + x^2}$ is called a *Witch of Agnesi*. Find the equation of the line tangent to the Witch of Agnesi at the point $\left(1, \frac{1}{2}\right)$.