

# TMATH 124 MW: Quiz 4

Show *all* your work (numerically, algebraically, or geometrically) for each and simplify. No credit is given without supporting work.

1. Find  $\frac{dy}{dx}$  given:

[2] (WebHW11 #3)  
 $y = 9 \cos(x) \sin(y) = 7$

[2] (LogWks #2)  
 $y = [\log_2(x^3 + 2)^{51}]$

[3] (§3.6 #42)  
 $y = \sqrt{x}e^{x^2-x}(x+1)^{\frac{2}{3}}$

2. (§3.6 #34) Consider  $f(x) = x^2 \ln(x)$  whose graph is provided on the right.

- (a) [1] Draw the equation of the line that is tangent to  $f(x)$  when  $x = 1$ .
- (b) [2] Find the equation of the line you drew in part a.

