

Test #3

Name: (print neatly) \_\_\_\_\_

Instructor:  Joyce  Servatius

(sign) \_\_\_\_\_

This exam is closed notes and closed book. There are no calculators allowed. To get full credit you must show all work neatly in the space provided on the test paper.

1. Evaluate the following derivatives [10 pts each]

a.  $f(x) = \frac{e^x}{\ln x}$

$$f'(x) =$$

b.  $\frac{d}{dt} \arctan(t^2 + 5t - 8) =$

c. Given  $f(x) = x \arcsin x$ , determine  $f'(1/2)$ .

d. Given  $y = 2^{x^2}$ , determine  $\frac{dy}{dx}$ .

2. Evaluate the following expressions [5 points each]

a.  $\log_8 2 =$

b.  $\arctan(-1) =$

3. Evaluate the following integrals. [10 points each]

a.  $\int \frac{e^x}{1 + e^{2x}} dx =$

b.  $\int_0^{\pi/2} \frac{\cos t}{1 + \sin t} dt =$

c.  $\int \frac{2 \arcsin x}{\sqrt{1 - x^2}} dx =$

4. Some exponential model question. [10]

5. A last question [10]

Prob	Points
1	
2	
3	
4	
5	
Total	