Math 191 X03
Assignment 3

Covers Sections 27.3, 27.5, 27.6, 25.1-25.6, 26.1-26.2
Due: Monday November 23 at 8:30am

INSTRUCTIONS:
This assignment will be marked for completion.
Solutions will be posted on the course website 24 hours after the deadline.
You may not copy the work of another person or AI.
Submit jpg or pdf files to the D2L Dropbox.

1. Find y' for:
a) $y = x^4 e^{4x}$
b) $y = \arctan(x^2) - \arcsin(x^2)$
c) $y = \log_3(1 + e^x)$

2. Find $\int x^9(2x + 7)\ dx$.

3. Find $\int_1^2 \frac{2x^3+1}{\sqrt{x^4+2x}}\ dx$.

4. Use Simpson's Rule with $n = 6$ and the data below to estimate $\int_7^{10} f(x)dx$.

x	$f(x)$
7	98
7.5	112.5
8	128
8.5	144.5
9	162
9.5	180.5
10	200

5. A cyclist was travelling at 15 m/s when he hit the brakes. The cyclist's acceleration after t seconds of braking was $a(t) = -6t$ (measured in m/s^2). What distance did the cyclist cover while stopping? Round your answer to two decimal places.

6. Find the area bounded by $y = -2x, y = \sqrt{x}$ and $y = 2$.