

Math 181, Calculus II, Exam 2

Name: _____

Instructions

- Write your name on both the question sheet and your booklet.
- Do not show any work on the question sheet. All answers should be written in the booklet.
- You may not use a calculator.
- Each problem will receive 20 points.
- Only fully justified answers will receive credit.

Problems

1. Compute the integrals:

$$\int \arctan x dx \quad \int \frac{dx}{x^3 + x}$$

2. Compute the integrals:

$$\int \frac{dx}{(1-x^2)^{3/2}} \quad \int \frac{x dx}{(x-1)^3}$$

3. Compute the improper integral:

$$\int_{\ln 2}^{+\infty} x e^{-x} dx$$

4. Compute the arclength of the graph of $y = 2x^{3/2}$ from $x = 0$ to $x = 1$.
5. Find the 3rd Maclaurin polynomial of the function $f(x) = 2 \sin(3x)$.

(Do not write below this line)

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