

Your name: \_\_\_\_\_

MTH 132-020

Calculus I

F18

**Quiz 10**

**Show all your work**

**Take-Home**

**due 11/19/18 at 10:20AM**

1. Compute  $\sum_{i=1}^n (4i^3 + 6i^2 + 1)$ .

2. Use the Right End Point Rule (and not the Fundamental Theorem of Calculus) to compute  $\int_{-1}^0 x^2 dx$ .

3. Evaluate the following definite integrals either by using the Fundamental Theorem of Calculus or by determining the area of the region corresponding to the integral.

(a)  $\int_{-\pi}^{\pi} \sin x dx$ .

(b)  $\int_1^3 \frac{x^5+x+1}{x^3} dx$ .

(c)  $\int_{-5}^5 \sqrt{25-x^2} dx$ .

(d)  $\int_3^5 |x-4| dx$

4. Compute

$$\lim_{n \rightarrow \infty} \sum_{i=1}^n \cos\left(\frac{\pi}{2} + \frac{i\pi}{2n}\right) \frac{\pi}{2n}$$

by interpreting the limit as a limit of Riemann sums and then using the Fundamental Theorem of Calculus to evaluate the corresponding definite integral.

5. Compute the derivative of the function  $f(x) = \int_{x^3}^{\sin x} \frac{\cos t}{t^4} dt$ .