

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

MTH 132-020

Calculus I

F18

Quiz 11

Show all your work

1. Compute the average value of  $\cos x$  on the interval  $[-\frac{\pi}{4}, \frac{\pi}{4}]$ .

2. A population is growing at a rate of  $n'(t) = 4t^3$  (where time is measured in years). Compute the net change of the population from  $t = 0$  to  $t = 2$ .

3. Compute each of the following (definite or indefinite) integrals:

(a)  $\int x \sec^2(x^2) dx$ .

(b)  $\int_0^1 (3x^2 + 1)\sqrt{x^3 + x + 1} dx$ .

(c)  $\int_{-2}^2 x \cos x dx$ .