

MA205 - Integral Calculus
Lesson 1: Introduction to MA 205

Mechanics Based Problems

1. Write the following sum in expanded form, then compute the sum:

$$\sum_{i=4}^6 3^i$$

2. Write the following sum in expanded form, then compute the sum:

$$\sum_{i=4}^8 (3i - 2)$$

3. Write the following sum in expanded form:

$$\sum_{i=1}^4 f(x_i)\Delta x$$

4. Write the following sum in expanded form:

$$\sum_{i=1}^4 f(x_{i-1})\Delta x$$

5. Write the following sum in expanded form:

$$\sum_{i=1}^4 f\left(\frac{x_{i-1} + x_i}{2}\right)\Delta x$$

6. Write the following sums using \sum notation:

(a) $f(x_0)\Delta x + f(x_1)\Delta x + f(x_2)\Delta x$

(b) $f(x_1)\Delta x + f(x_2)\Delta x + f(x_3)\Delta x + f(x_4)\Delta x$