

MAT 122 – 001  
Spring 2008  
Review for Test one  
Show all work. Calculators may not be used.

1. Write an expression to estimate  $\int_2^5 f(x) dx$  using  $n = 6$  left endpoint rectangles.

2. Describe the area represented by  $\lim_{n \rightarrow \infty} \sum_{k=1}^n \left(2 + k \times \frac{3}{n}\right)^4 \times \frac{3}{n}$ .

3 Determine  $\int_0^4 (1 + 3y - y^2) dy$ .

4. Determine  $\int_{-5}^5 \frac{2}{x^3} dx$ .

5. Determine  $\int_0^1 (3 + x\sqrt{x}) dx$ .

6.  $g(x) = \int_0^{x^2} \sin^2 t dt$ . Determine  $g'(x)$ .

7.  $v(t) = 32 - 2t^2$ .

7a. Find the displacement during  $[0, 6]$ .

7b. Find the distance traveled during  $[0, 6]$ .