

MAC 2312
Quiz 2
September 10, 2008

1) Approximate the value of

$$\int_1^5 \frac{1}{x^2} dx$$

using a Riemann sum with five rectangles.

2) Find the exact value of

$$\int_1^3 8x^3 - x dx$$

using a Riemann sum. You must use a Riemann sum to get any credit for this problem.

3) Given that:

$$\int_0^\pi \sin^2(x) dx = \frac{\pi}{2} \quad \int_0^{\frac{\pi}{2}} \sin^2(x) dx = \frac{\pi}{4} \quad \int_{\frac{\pi}{2}}^{\frac{3\pi}{4}} \cos^2(x) dx = \frac{\pi}{8} - \frac{1}{4} \quad \int_{\frac{3\pi}{4}}^\pi \cos^2(x) dx = \frac{\pi}{8} + \frac{1}{4}$$

find the value of

$$\int_{\frac{\pi}{2}}^\pi 2 \sin^2(x) - 3 \cos^2(x) dx$$