

## Math 1496 Calc 1 - Homework #9

Pg. 291, #17, 23, 25, 29, 31 and 33

Pg. 304, #47, 49, 51

Pg. 313, #15-25 odd,

Pg. 314, #27, 29, 31 and 35,

Pg. 328 # 9, 13, 15, 19, 23, 27, 39, 42, 44

Pg. 329 # 77, ?, 81 and 83

Pg. 291

Find the indicated antiderivative

$$\#17 \int (x^{3/2} + 2x + 1) dx$$

$$\#23 \int \frac{x+6}{\sqrt{x}} dx$$

$$\#25 \int (5 \cos x + 4 \sin x) dx$$

$$\#29 \int (\tan^2 y + 1) dy$$

$$\#31 \int (2 \sin x - 5x^x) dx$$

$$\#33 \int (2x - 4^x) dx$$

Pg. 304 Approximate the area using  $n$  rectangles and use the limit process to find the area of the region bounded by the given function and the  $x$  axis on the given interval

$$\#47 \quad y = -4x + 5, \quad [0, 1]$$

$$\#49 \quad y = x^2 + 2, \quad [0, 1]$$

$$\#51 \quad y = 25 - x^2, \quad [1, 4]$$

Pg 313 #15-25 odd Write a definite integral that represents the area of the region (Do not evaluate). Pictures are in the book.

Pg. 314. Sketch the region whose area is given by the following definite integral

$$\#27 \int_0^3 4 dx$$

$$\#29 \int_0^4 x dx$$

$$\#31 \int_0^2 (3x + 4) dx$$

$$\#35 \int_{-7}^7 \sqrt{49 - x^2} dx$$

Pg. 328

Find the indicated definite integral

$$\#9 \int_{-1}^0 (2x - 1) dx$$

$$\#13 \int_1^2 \left( \frac{3}{x^2} - 1 \right) dx$$

$$\#15 \int_1^4 \frac{u-2}{\sqrt{u}} dx$$

$$\#19 \int_{-1}^0 (t^{1/3} - t^{2/3}) dt$$

$$\#23 \int_0^\pi (\sin x - 7) dx$$

$$\#27 \int_{-\pi/6}^{\pi/6} \sec^2 x dx$$

Pg. 328 Find the area of the region bound by the following curves

$$\#39 \quad y = 5x^2 + 1, \quad x = 0 \quad x = 2, \quad y = 0$$

$$\#42 \quad y = 4x - x^2, \quad y = 0$$

$$\#44 \quad y = e^x, \quad x = 0 \quad x = 2, \quad y = 0$$

Pg. 329 Use the second Fundamental thm to find the following

$$\#77 \quad \frac{d}{dx} \int_{-1}^x \sqrt{t^4 + 1} dt$$

$$\#? \quad \frac{d}{dx} \int_x^1 2^t dt$$

$$\#81 \quad \frac{d}{dx} \int_x^{x+2} (4t + 1) dt$$

$$\#83 \quad \frac{d}{dx} \int_0^{\sin x} \sqrt{t} dt$$