

Math 1496 Calc 1 - Homework #8

Pg. 276, #15, 17, 19, 23, 25, 27 and 31

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

Pg. 304, #47, 49, 51

Pg. 276, #15, 17, 19

Compare Δy and dy for the following

$$15. \quad y = 0.5x^2 \quad x = 1 \quad \Delta x = dx = 0.1$$

$$17. \quad y = x^4 + 1 \quad x = -1 \quad \Delta x = dx = 0.01$$

$$19. \quad y = x - 2x^3 \quad x = 3 \quad \Delta x = dx = 0.001$$

Pg. 276, #23, 25 and 27

Find the differential for the following

$$23. \quad y = x \tan x$$

$$25. \quad y = \frac{x+1}{2x-1}$$

$$27. \quad y = \sqrt{9-x^2}$$

$$31. \quad y = x \sin^{-1} x$$

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

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

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

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