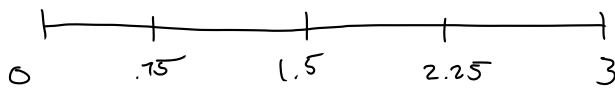


Math 1121

Homework # 29

6, 11

#6



$$\Delta x = \frac{3-0}{4} = \frac{3}{4} = .75$$

$$\text{a } \frac{3}{4} \left(\frac{1}{2} f(0) + f(.75) + \dots + f(2.25) + \frac{1}{2} f(3) \right)$$

$$= \frac{3}{4} \left(\frac{1}{2} (2 \cdot 0^3 + 1) + 2 \cdot .75^3 + 1 + \dots + 2 \cdot 2.25^3 + 1 + \frac{1}{2} (2 \cdot 3^3 + 1) \right)$$

$$\text{b } \frac{3}{4 \cdot 3} \left(f(0) + 4 f(.75) + 2 f(1.5) + 4 f(2.25) + f(3) \right)$$

$$= \frac{1}{4} \left(2 \cdot 0^3 + 1 + 4(2 \cdot .75^3 + 1) + 2(2 \cdot 1.5^3 + 1) + 4(2 \cdot 2.25^3 + 1) + 2 \cdot 3^3 + 1 \right)$$

11 $y = \sqrt{4 - x^2}$

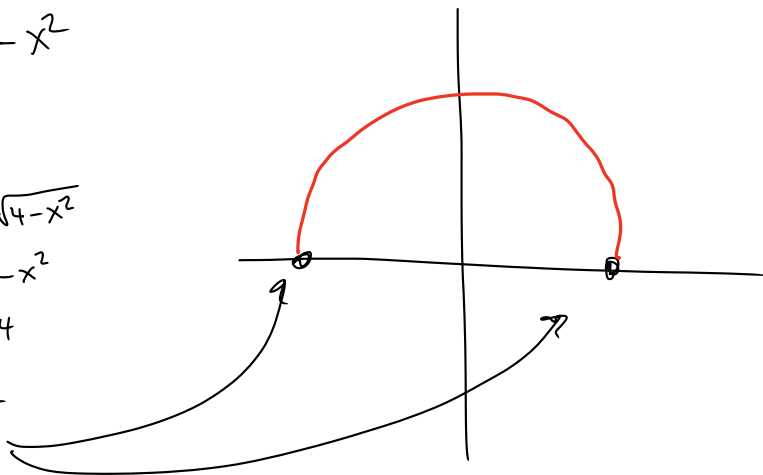
semicircle,

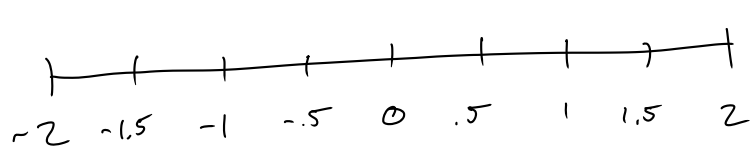
$$y=0, \quad 0 = \sqrt{4 - x^2}$$

$$0 = 4 - x^2$$

$$x^2 = 4$$

$$x = \pm 2$$





$$\Delta x = \frac{2 - (-2)}{8} = \frac{4}{8} = \frac{1}{2}$$

$$\underline{a} \quad \frac{1}{2} \left(\frac{1}{2} f(-2) + f(-1.5) + \dots + f(1.5) + \frac{1}{2} f(2) \right)$$

$$= \frac{1}{2} \left(\frac{1}{2} \sqrt{4 - (-2)^2} + \sqrt{4 - (-1.5)^2} + \dots + \sqrt{4 - 1.5^2} + \frac{1}{2} \sqrt{4 - 2^2} \right)$$

$$\underline{b} \quad \frac{1}{2 \cdot 3} \left(f(-2) + 4f(-1.5) + 2f(-1) + \dots + 4f(1.5) + f(2) \right)$$

$$= \frac{1}{6} \left(\sqrt{4 - (-2)^2} + 4\sqrt{4 - (-1.5)^2} + 2\sqrt{4 - (-1)^2} + \dots + 4\sqrt{4 - 1.5^2} + \sqrt{4 - 2^2} \right)$$