

HW #26: Worksheet on Riemann Sums

1. (a)  $\frac{1}{4} \left( 0 + \frac{1}{2} + \frac{1}{\sqrt{2}} + \frac{\sqrt{3}}{2} \right) = .5182$

(b)  $\frac{1}{4} \left( \frac{1}{2} + \frac{1}{\sqrt{2}} + \frac{\sqrt{3}}{2} + 1 \right) = .7682$

2. (a)  $\frac{1}{2} \left( 1 + \frac{2}{3} + \frac{1}{2} + \frac{2}{5} \right) = 1.2833$

(b)  $\frac{1}{2} \left( \frac{2}{3} + \frac{1}{2} + \frac{2}{5} + \frac{1}{3} \right) = .95$

3. (a)  $2 + 3 + 4 + 3 + 2 = 14$

(b)  $3 + 4 + 3 + 2 + 1 = 13$

(c)  $2.5 + 3.5 + 3.5 + 2.5 + 1.5 = 13.5$

4. (a) Sketch graph.

(b)  $(40)(4) + (36)(4) + (26)(4) = 408$  gallons

(c)  $(36)(4) + (26)(4) + (8)(4) = 280$  gallons

(d)  $(38)(4) + (30)(4) + (18)(4) = 344$  gallons

5.  $k = 10$

6. (a)  $120 + (8.9)(3) + (6.8)(2) + (6.4)(4) + (5.9)(3) = 203.6$  gallons

(b)  $120 + (6.8)(3) + (6.4)(2) + (5.9)(4) + (5.7)(3) = 193.9$  gallons

7. (a)  $113 - ((5.5)(3) + (2.7)(2) + (1.6)(3)) = 86.3^\circ \text{ F}$

(b)  $113 - ((2.7)(3) + (1.6)(2) + (0.8)(3)) = 99.3^\circ \text{ F}$

8.  $(9.2)(10) + (7.0)(10) + (2.4)(10) + (4.3)(10) = 229$  miles.

9. 67 gallons