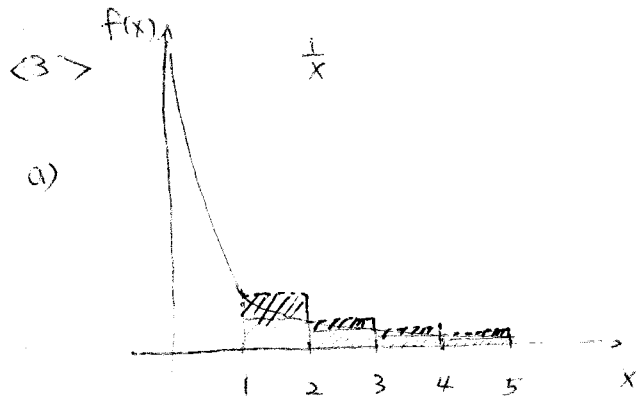


< HW # 4 >

(Section 5.1)



$$R_4 = 1 \times \frac{1}{2} + 1 \times \frac{1}{3} + 1 \times \frac{1}{4} + 1 \times \frac{1}{5} = \frac{77}{60} = 1.28\bar{3}$$

This underestimates the area.

$$b) L_4 = 1 \times 1 + 1 \times \frac{1}{2} + 1 \times \frac{1}{3} + 1 \times \frac{1}{4} = \frac{25}{12} = 2.08\bar{3}$$

This overestimates the area.



< 12 > Speedometer readings for a motorcycle at 12-second intervals.

t(s)	0	12	24	36	48	60
v (ft/s)	30	28	25	22	24	27

$$a) 30 \times 12 + 28 \times 12 + 25 \times 12 + 22 \times 12 + 24 \times 12 = 129 \times 12 = 1548$$

$$b) 12 \times 28 + 12 \times 25 + 12 \times 22 + 12 \times 24 + 12 \times 27 = 12 \times 126 = 1512$$

c) The estimates are neither lower nor upper estimates since v is neither an increasing nor a decreasing function.