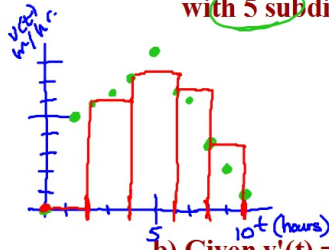


Calculus WarmUp
Review for 2nd Quarter Final Exam

t hours	v(t) miles/hour
→ 0	0
1	50
→ 2	55
3	60
→ 4	70
5	80
→ 6	60
7	55
→ 8	30
9	20
10	10

a) Approximate the total distance traveled by a car for the first 10 hours using LRAM with 5 subdivisions.



$$\int_0^{10} v(t) dt$$

$$\text{LRAM} \approx 2(v(2) + v(4) + v(6) + v(8) + v(10))$$

$$\approx 2(55 + 70 + 60 + 30)$$

$$\approx 2(215) \approx 430 \text{ miles}$$

b) Given $v'(t) = a(t)$, determine when $a(t) > 0$.

$$a(t) > 0 \text{ at } (0, 5) \text{ b/c } v(t) \text{ is increasing}$$

c) Approximate $a(3)$.

$$\frac{\frac{m}{h}}{h} \cdot \frac{v(4) - v(2)}{4 - 2} = \frac{70 - 55}{2} = 7.5 \frac{m}{hr^2}$$

$$\frac{m}{h} \cdot \frac{1}{h} = \frac{m}{h^2}$$

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a) Approximate the total distance traveled by a car for the first 10 hours using LRAM with 5 subdivisions.

b) Given $v'(t) = a(t)$, determine when $a(t) > 0$.

c) Approximate $a(3)$.