

Distance Traveled Problems

I. Estimate the distance traveled using RRAM, LRAM and MRAM with 4 rectangles.

1. $v(t) = t^2 + 1$ $a = 1$ $b = 3$

2. $v(t) = 9 - t^2$ $a = 0$ $b = 2$

3. $v(t) = 6t + 1$ $a = 1$ $b = 2$

4. $v(t) = 4 \sin(t)$ $a = 0$ $b = \frac{P}{2}$

5. $v(t) = 4t - t^2$ $a = 0$ $b = 4$

II. Use the tables to estimate the distance traveled using RRAM, LRAM and MRAM with 4 rectangles.

1.

t (secs)	0	1	2	3	4	5	6	7	8
$v(t)$ (m/s)	10	18	30	45	57	60	55	42	32

2.

t (secs)	0	.5	1	1.5	2.0	2.5	3.0	3.5	4.0
$v(t)$ (ft/s)	3.2	5.1	6.7	9.8	15.6	20.2	29.7	41.5	60.3

III. Use the tables to estimate the distance traveled using RRAM and LRAM with 5 rectangles.

t (secs)	0	5	8	10	12	20
$v(t)$ (in/sec)	5	21	30	35	40	56

Answers

I.

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|------------------|--------------|---------------|
| 1. RRAM = 12.75 | LRAM = 8.75 | MRAM = 10.625 |
| 2. RRAM = 14.25 | LRAM = 16.25 | MRAM = 15.375 |
| 3. RRAM = 10.75 | LRAM = 9.25 | MRAM = 9.8125 |
| 4. RRAM = 4.7338 | LRAM = 3.163 | MRAM = 4.0258 |
| 5. RRAM = 10 | LRAM = 10 | MRAM = 11 |

II.

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|-----------------|-------------|------------|
| 1. RRAM = 348 | LRAM = 304 | MRAM = 330 |
| 2. RRAM = 112.3 | LRAM = 55.2 | MRAM = 77 |

- III. RRAM = 793 LRAM = 558