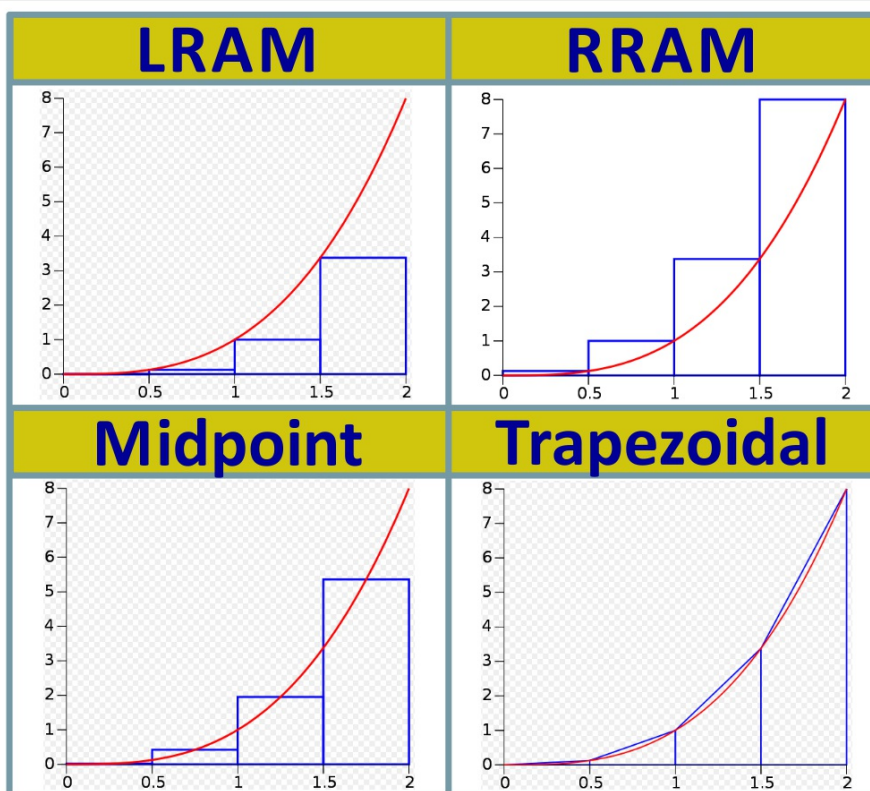


SECTION 11

Approximations using a Table of Values

- ③ How can the various approximations be applied to calculate the total change?
- ③ How can we use a Rieman Sum when Δx is not constant?

APPROXIMATION



SUMMARY

EXAMPLE 1: Using a Table of Values

The following chart indicates the speed of a sprinter during the first 10 seconds of the race.

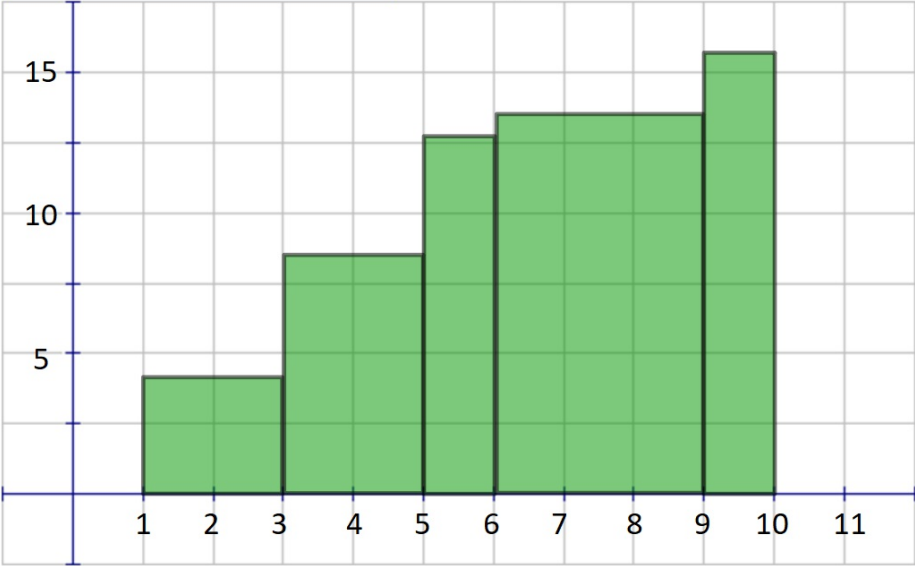
Time (sec)	0	1	3	5	6	9	10
Velocity (ft/sec)	0	4.2	8.8	12.6	13.1	15.2	15.0

Estimate the distance traveled using a

- a.) Left-endpoint approximation method.
- b.) Right-endpoint approximation method.
- c.) Trapezoidal approximation method.

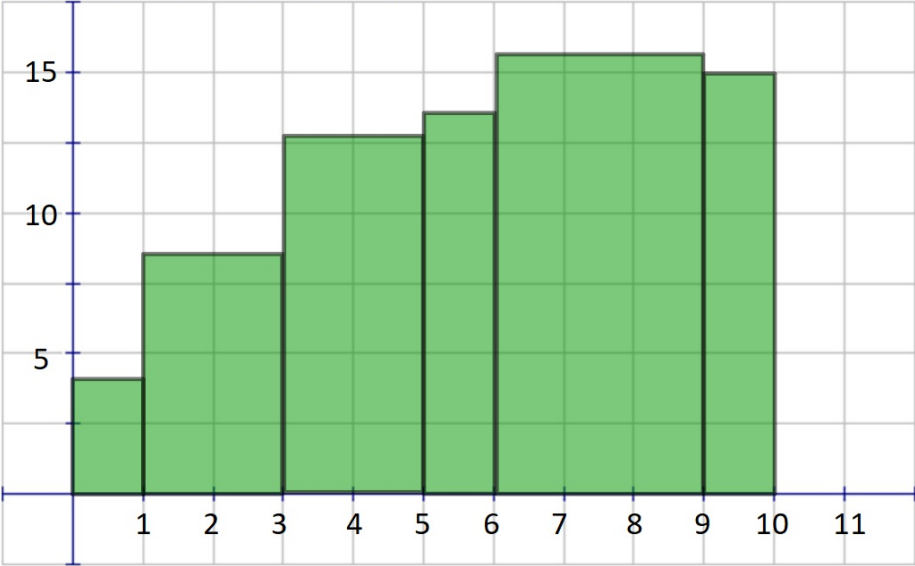
EXAMPLE 1A: LRAM

Time (sec)	0	1	3	5	6	9	10
Velocity (ft/sec)	0	4.2	8.8	12.6	13.1	15.2	15.0



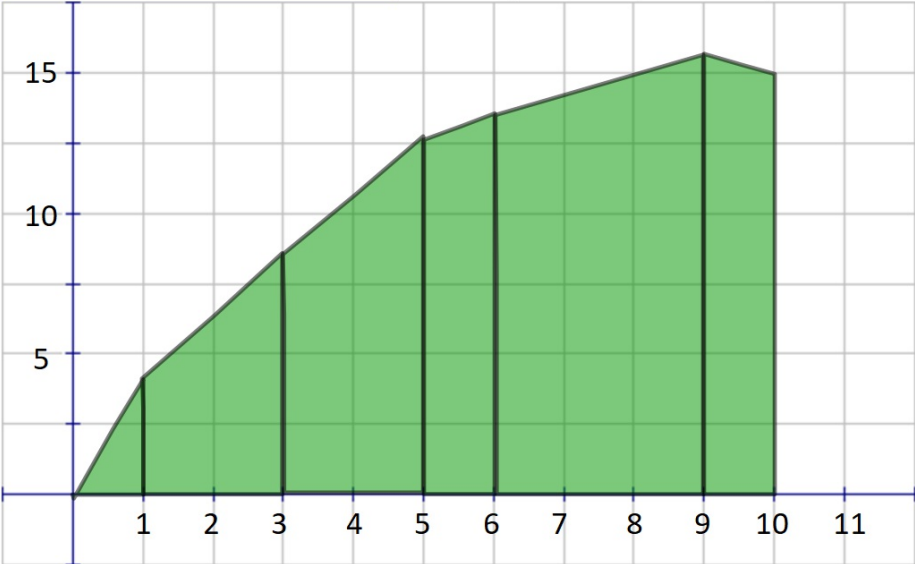
EXAMPLE 1B: RRAM

Time (sec)	0	1	3	5	6	9	10
Velocity (ft/sec)	0	4.2	8.8	12.6	13.1	15.2	15.0



EXAMPLE 1C: Trapezoidal Method

Time (sec)	0	1	3	5	6	9	10
Velocity (ft/sec)	0	4.2	8.8	12.6	13.1	15.2	15.0



SELF CHECK: Rieman Sums using a Table of Values

- ✓ **What is a Rieman Sum and how it it used to approximate the area under a curve?**
- ✓ **How can we use a Rieman Sum when Δx is not constant?**

