Spring 2021: Chapter 2 Numerical Differentiation Chapter 02.00-02.03

Hi Autar, when you submit this form, the owner will be able to see your name and email address.

1. Velocity vs time data is given below. Allowed to use only a second-order polynomial to approximate velocity to later find acceleration, what data points you would choose to find the velocity first at t=1.1s. Write the values of time separated by commas - leave no spaces.

t(s)	0	0.5	1.2	1.5	1.8
v(m/s)	0	213	223	275	300

Enter your answer

2. Given the data below

time (s)	0	3	6	9	12	15
velocity (m/s)	2	10	15	20	22	28

Which one is the most appropriate scheme to use based on the order of accuracy and data availability to calculate the acceleration in m/s^2 at 6s?

- ◯ Forward Divided Difference
- ◯ Backward Divided Difference
- ◯ Central Divided Difference

3. Given the data below

time (s)	0	3	6	8	12	15
velocity (m/s)	2	10	15	20	22	28

Which one is the most appropriate scheme to use based on the order of accuracy and data availability to calculate the acceleration in m/s^2 at 6s?

- ◯ Forward Divided Difference
- ◯ Backward Divided Difference
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