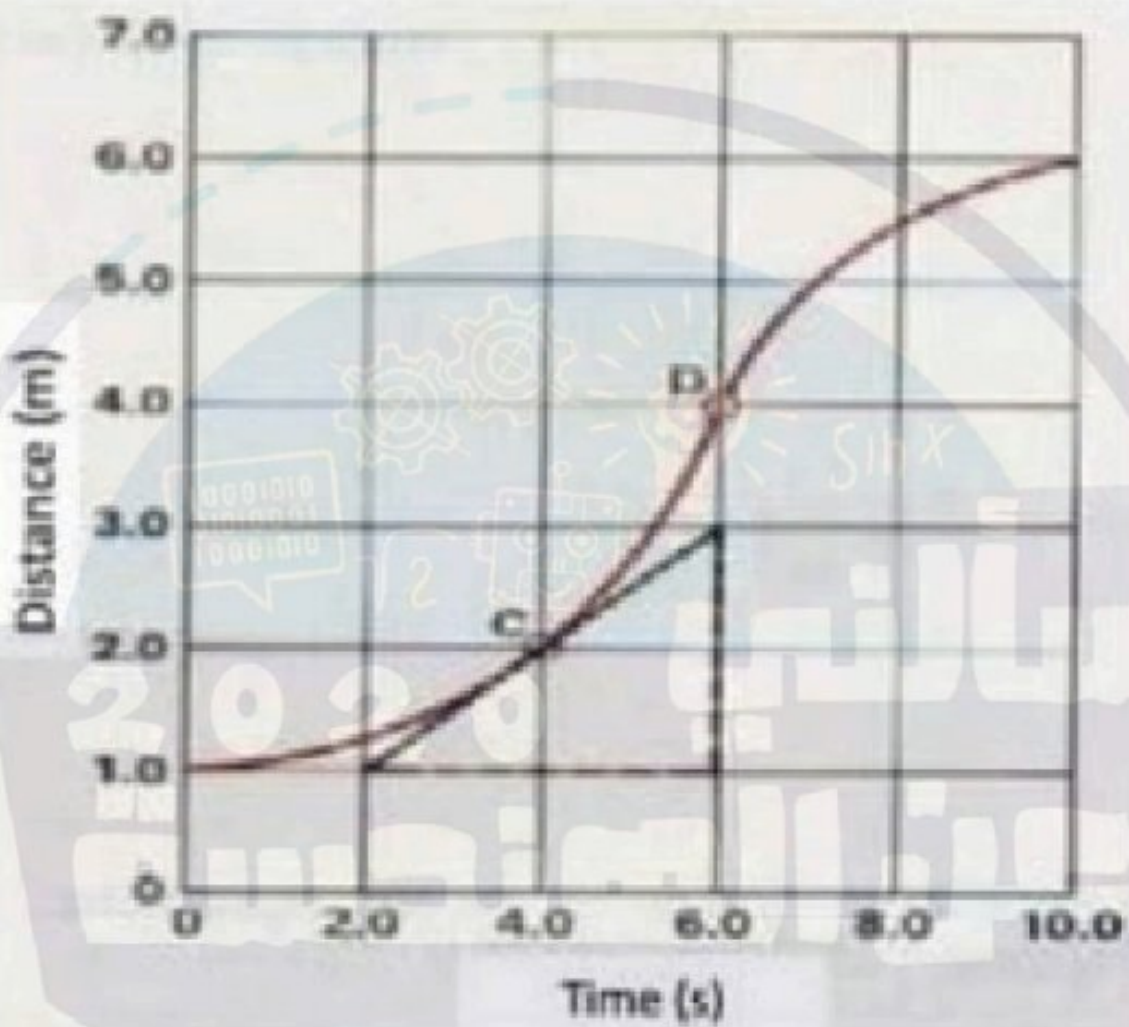From the graph shown find the instantaneous velocity at t=4 (s):

○ a. 0.5 m/s

○ b. 0.67 m/s

○ c. 2 m/s

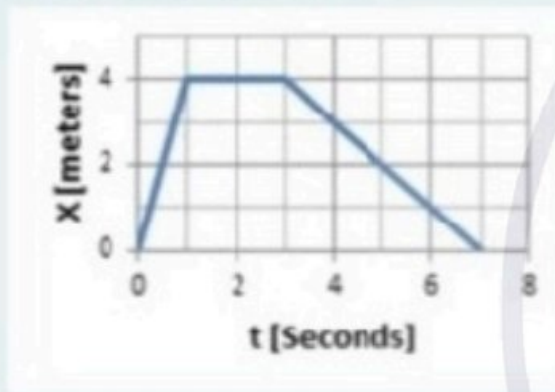● d. 0.9 m/s

○ e. zero

Clear my choice

$$\boxed{1} \qquad V_{ist}(4S) = \frac{(3-1)m}{(6-2)S}$$

$$= 0.5 \, m/S$$

A particle moves along the X-axis. Its position-time graph is shown below. The magnitude of the average velocity (in m/s) of the particle between t = 0 and t = 1 sec is:

○ a. 1

○ b. 2

○ c. 8

● d. 4

○ e. zero

Clear my choice

[2] $\dfrac{(4-0)\,m}{(1-0)\,s} = 4\,m/s$

The histogram shown in the figure below describes the relationship between average velocities (in cm/s) and time (in sec.). The distance traveled in the time interval (0.4–0.6 sec) is:
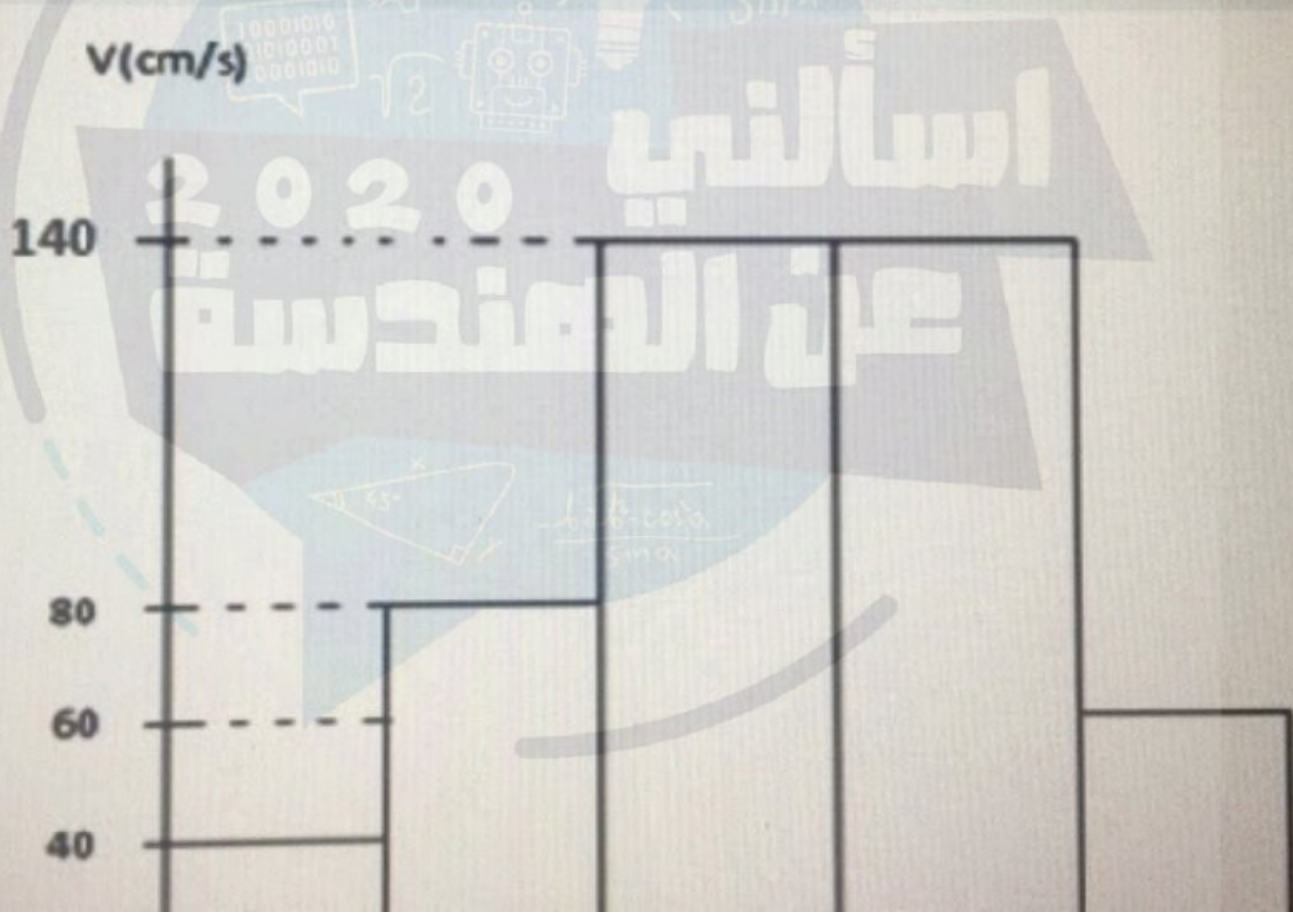
○ a. 24 cm

■ b. 28 cm

○ c. 36 cm

○ d. 40 cm

○ e. none of the above

[3] distance traveled = the area under the graph

$$= 140 \text{ cm/s} \times 0.2 \text{s}$$

$$= 28 \text{ cm}$$

The figure below shows three paper tapes that have passed a ticker timer which makes a dot every 1/50 sec. The direction of motion of the tapes is as shown in the figure. The tape that contains negative acceleration is:
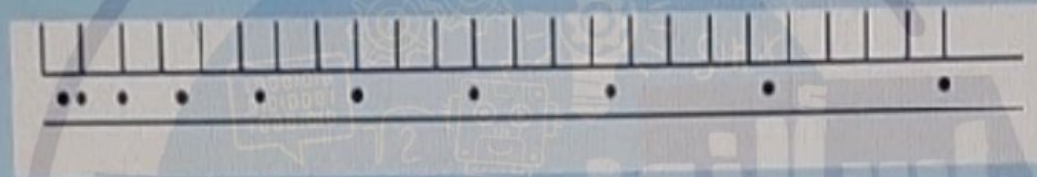
Initial ——► Final

A

B

C

O a. (Tape A)
O b. (Tape B)
● c. (Tape C)
Clear my choice

[4] Tape [c]

The picture below shows the pattern of dots made by a ticker timer for a moving object. The tape is oriented so that the first dot that was made is at the left. Notice that vertical grid lines (| | | |) have been drawn to help you judge the distances. Which of the following best describes the motion of the object?

- ○ The object is slowing down with a constant acceleration

- ◉ The object has a constant velocity

- ○ The object is speeding up with a constant acceleration

- ○ The object is slowing down with a non-constant acceleration

- ○ The object is speeding up with a non-constant acceleration

Clear my choice

[5] C- The object is speeding up with a constant acceleration

6- This figure shows a portion of a tape which was taken in Lab 111 for the kinematics experiment where the used vibrator makes 200 vibrations per second. (using this figure, answer this and the following two questions). The maximum speed is between the points: *

○ AB

○ BC

○ CD

◉ DE

$\boxed{6}$ c- CD

8- for the same tape, The Minimum acceleration is between the points *

○ AB and BC

○ BC and CD

○ CD and DE

○ Can't be specified

7 c- CD and DE

7- For the same tape in the previous question, If the displacement between A and B is 3.1 cm, then the average speed in this interval is: *

○ 213 cm/s

○ 340 cm/s

○ 152 cm/s

○ 124 cm/s

[8] $1/200 = 0.005\,S \rightarrow$ between two dots

$0.005 \times 5 = 0.025 \rightarrow$ between two points

$$\Delta V = \frac{\Delta x}{\Delta t} = \frac{3.1\ cm}{0.025\,S} = 124\ cm/S$$