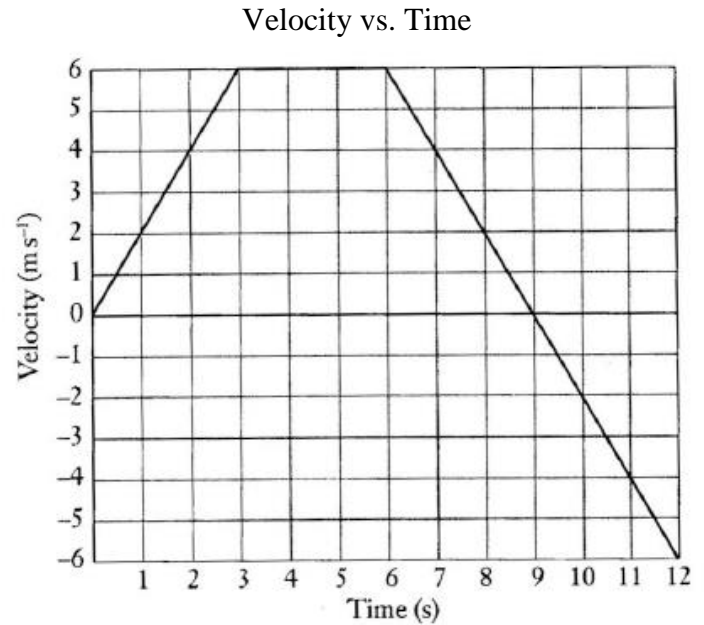


Worksheet: Velocity vs Time Graphs

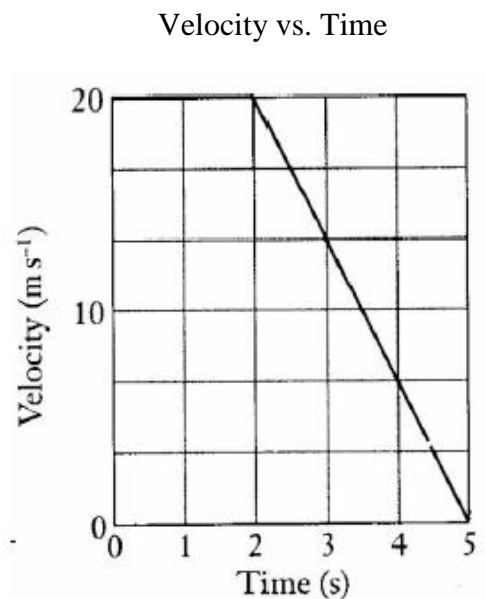
- 1) The graph shows a velocity-time graph for a student moving north in a straight line.
(NOTE: $\text{m/s} = \text{ms}^{-1}$)

- What is the velocity of the student at $t = 2 \text{ s}$?
- What is the velocity of the student at $t = 5 \text{ s}$?
- What is the velocity of the student at $t = 8 \text{ s}$?
- What is the velocity of the student at $t = 11 \text{ s}$?
- Calculate the acceleration of the student between $t = 6 \text{ s}$ and $t = 9 \text{ s}$.
- Calculate the displacement of the student between $t = 9 \text{ s}$ and $t = 12 \text{ s}$.
- Did the student change directions at any time? If so, when?



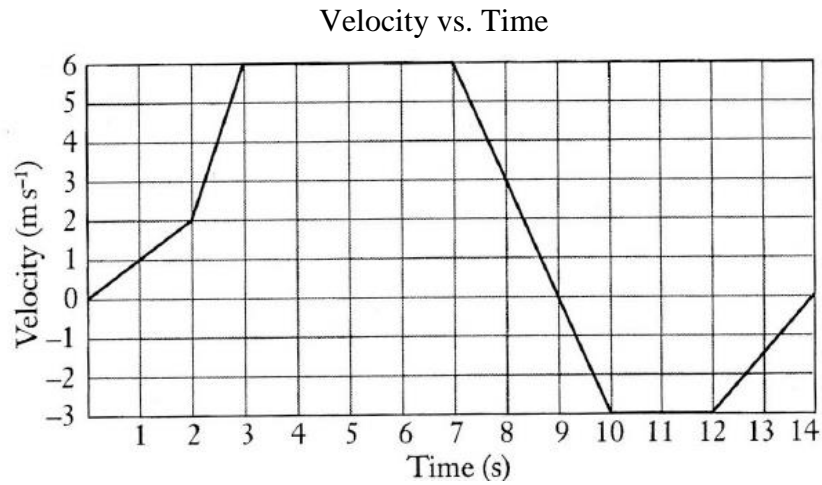
- 2) The diagram shows a velocity-time graph for a car travelling east in a straight line along a road.

- What is the acceleration of the car between $t = 0 \text{ s}$ and $t = 2 \text{ s}$?
- What is the acceleration of the car between $t = 2 \text{ s}$ and $t = 5 \text{ s}$?
- Calculate the displacement of the car between $t = 0 \text{ s}$ and $t = 2 \text{ s}$.
- Calculate the displacement of the car between $t = 2 \text{ s}$ and $t = 5 \text{ s}$.



3) The graph shows a velocity-time graph for a soccer player moving east in a straight line. What type of motion does the soccer player have between:

- a) $t = 0 \text{ s}$ and $t = 2 \text{ s}$?
- b) $t = 3 \text{ s}$ and $t = 7 \text{ s}$?
- c) $t = 7 \text{ s}$ and $t = 10 \text{ s}$?



4) Refer to the velocity time graph below to answer the following questions. Interval A is from $t = 0$ -2s, B from 2-5 s, C from 5-7 s, D from 7-9 s and E from 9-10 s.

- a) Describe the motion of the object for each of the 5 intervals. You may use speeding up, slowing down, going at constant velocity, to the left or to the right.
- b) When does the object turn around?
- c) Find the acceleration of the object during interval A and interval D.
- d) Find the displacement of the object during interval B.
- e) What is the total distance covered?

