

POSITION-TIME GRAPHS AND VELOCITY-TIME GRAPHS

Assume East positive direction for all examples.

Sketch a position-time graph for each situation described below.

Next to each position-time graph sketch a possible velocity-time graph that can represent the same situation.

1. An object moves eastwards at constant velocity of 10 m/s [E].

2. An object is at rest for 5 s and then moves at constant velocity of 4 m/s [W].

3. An object starts 50 m [W] and moves eastwards at constant velocity of 2 m/s [E].

4. An object starts at 2 m [E] and speeds up in positive direction. After 10 seconds the object suddenly starts moving westwards with constant speed that is greater than its average speed during the first 10 s.

5. An object starts 10 m [W] and moves in negative direction with decreasing speed. After 15 s, the object stops and remains at rest for 10s. Between 25 and 35 s the object accelerates eastwards.

6. Sketch a P/T graph for non-uniform motion.

7. Sketch a V/T graph for an object that speeds up but moves in negative direction.