

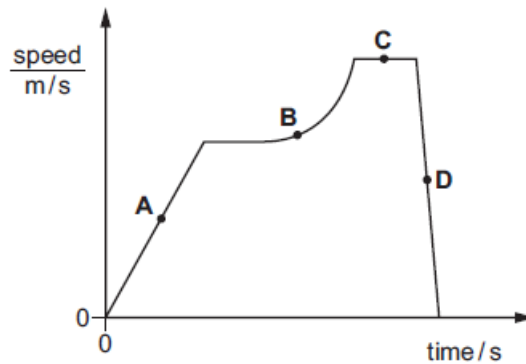
# Motion Graphs-1

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## 1. **QUESTION-1**

An object is travelling in a straight line. The diagram is the speed-time graph for the object.

At which labelled point is the object accelerating at a changing rate?



## 2. **QUESTION-2**

(a) Fig. 1.1 shows the axes used to plot distance-time graphs.

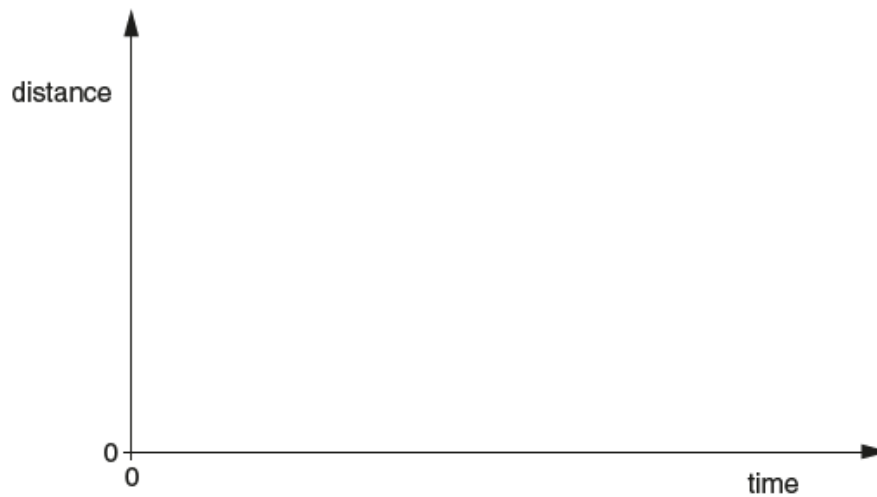
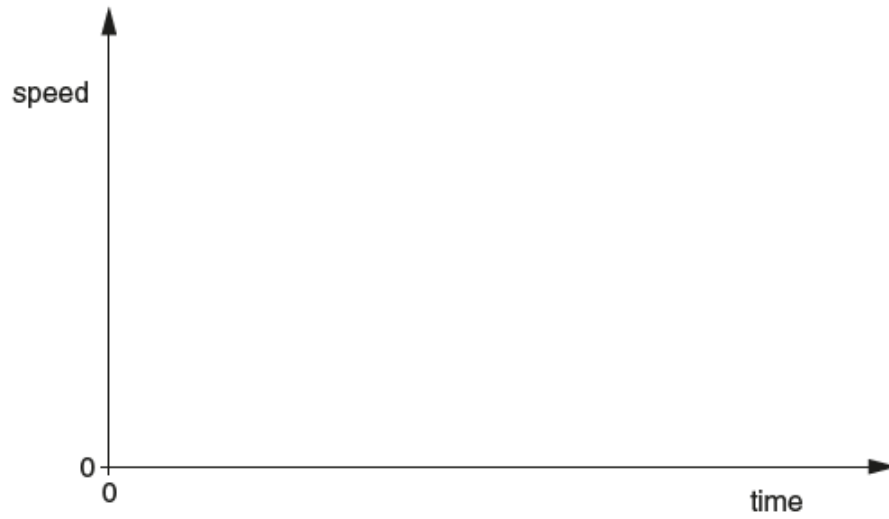


Fig. 1.1

On Fig. 1.1, draw graphs for an object that is

- (i) moving with constant speed, labelling the graph A,
- (ii) moving with decreasing speed, labelling the graph B.

(b) Fig. 1.2 shows the axes used to plot speed-time graphs.



**Fig. 1.2**

On Fig. 1.2, draw graphs for an object that is

- (i) moving with constant acceleration, labelling the graph S,
- (ii) moving with increasing acceleration, labelling the graph T.

### 3. QUESTION-3

Fig. 1.1 is the speed-time graph for an ice skater.

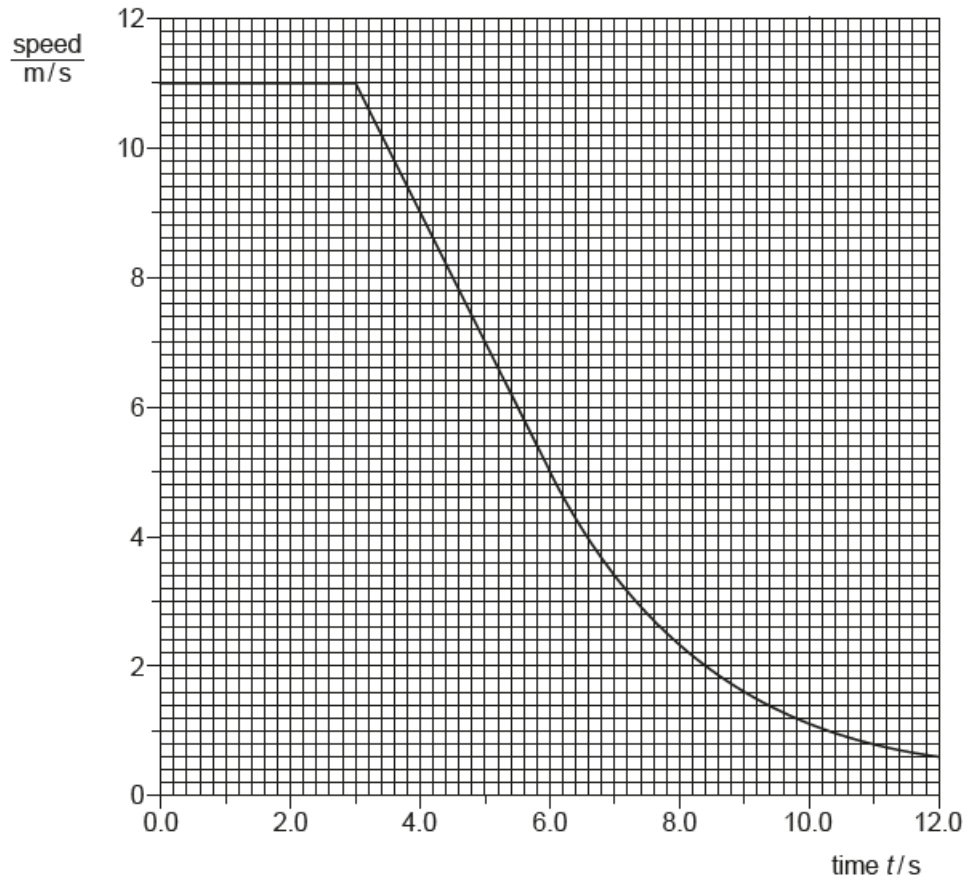


Fig. 1.1

- (a) Explain what is meant by *deceleration*.
- (b) Use Fig. 1.1 to determine
- the distance travelled between times  $t = 3.0$  s and  $t = 6.0$  s,
  - the deceleration between times  $t = 3.0$  s and  $t = 6.0$  s.

#### 4. QUESTION-4

Fig. 1.1 shows the speed-time graph for the motion of a car.

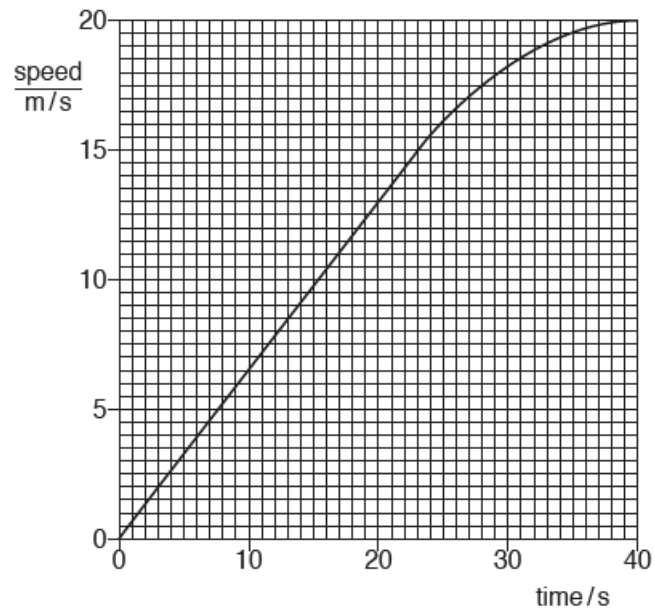


Fig. 1.1

The mass of the car is 1200 kg.

(a) Calculate, for the first 20 s of the motion,

(i) the distance travelled by the car,

(ii) the acceleration of the car,

(iii) the resultant force acting on the car.

(b) Describe the motion of the car in the period of time from 25 s to 40 s.