Equations of motion using graphical analysis

IX- SCIENCE

SUBJECT : PHYSICS
CHAPTER NUMBER: 8
CHAPTER NAME : MOTION

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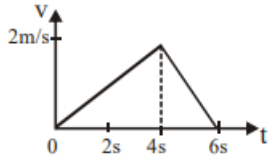
HOME ASSIGNMENT

1. The velocity-time graph of a particle moving along a straight line is as shown in figure. Which of the following is/are INCORRECT for this motion?



(1) The motion is uniform.
(2) The acceleration is uniform.
(3) The particle changes its direction of motion.
(4) The displacement during the period 0-4s is equal to the area under the velocity-time graph for this period.

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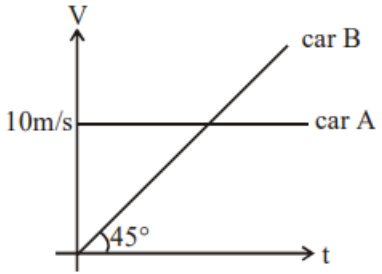
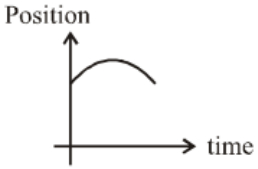
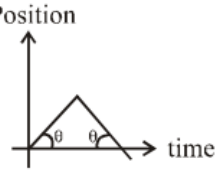
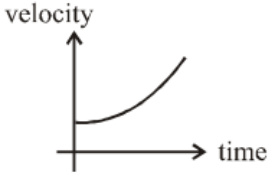
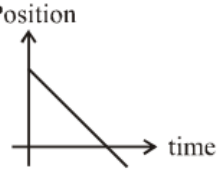
2. Initially car A is 10.5 m ahead of car B. Both start moving at time t = 0 in the same direction along a straight line. The velocity time graph of two cars is shown in figure. Find the time (in sec) when the car B will catch the car A.



HOME ASSIGNMENT

3. Match the situation given in column I with the possible curves in column II.

Column I	Column II	
(A) Particle moving with constant speed	(p)	
(B) Particle moving with increasing acceleration	(q)	
(C) Particle moving with constant negative acceleration	(r)	
(D) Particle moving with zero acceleration	(s)	

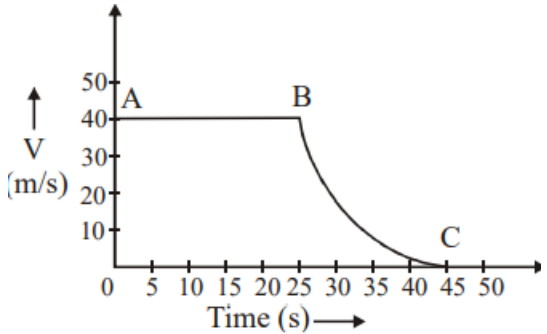
HOME ASSIGNMENT

4. The velocity-time graph of an object is shown in the figure.

(a) State the kind of motion that object has, from A to B and from B to C.

(b) Identify the part of graph where the object has zero acceleration. Give reason for your answer.

(c) Identify the part of graph where the object has negative acceleration. Given reason for your answer



5. The velocity-time graph of a body is given:

(i) State the kind of motion reported by OA, AB.

(ii) What is the velocity of the body after 10s and after 40s ?

(iii) Calculate negative acceleration of the body.

(iv) Calculate the distance covered by the body between 10th and 30th second.