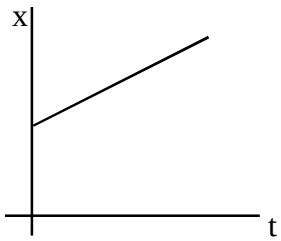
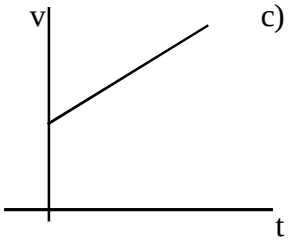
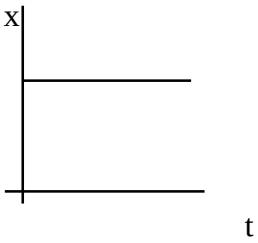
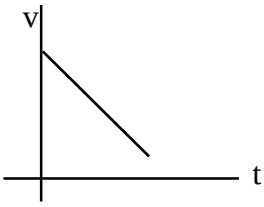
Graphs and related problems:

1. Which graph represents a uniform motion?

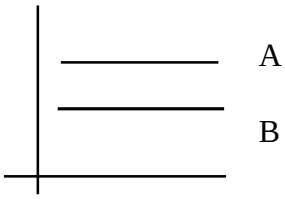
a) 

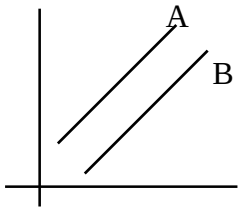
b) 

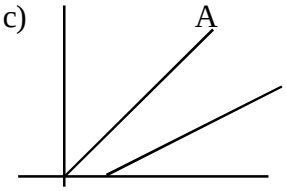
c) 

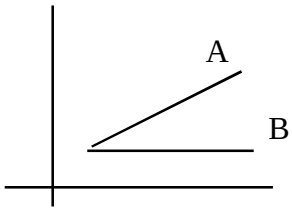
d) 

2. Which of the following displacement-time graphs of two objects A and B represent them moving with zero relative speed?

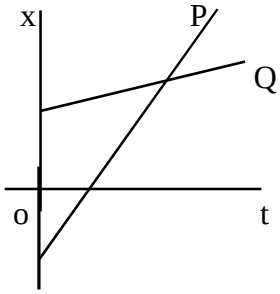
a) 

b) 

c) 

d) 

3. Figure shows time-displacement curve of the particles P and Q. Which of the following statemenets is correct?

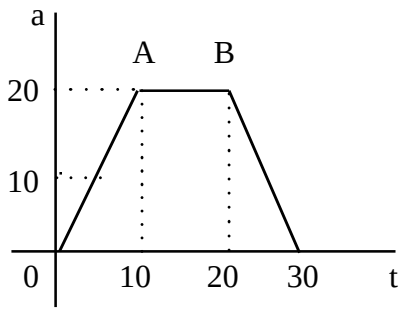


a) Both P and Q move with equal uniform speeds. b) P is accelerated and Q is retarded
c) Both P and Q move with uniform speeds but speed of P is more than that of Q.
d) Both P amd Q move with uniform speeds but the speed of Q is more than that of P.

Date: 13-07-2011

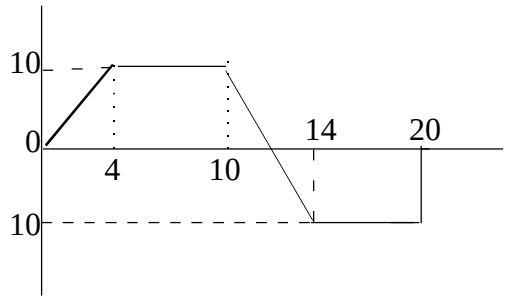
Graphs and related problems:

4. Figure shows time-acceleration diagrams for a particle moving in a straight line. The average acceleration in the first twenty seconds is? (in m/s/s)



a) 45 b) 40 c) 15 d) 20

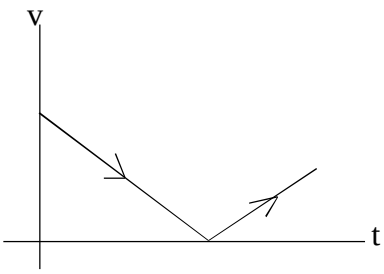
5. The graph shows motion of a car. The displacement of the car in 20 seconds is? (in m)



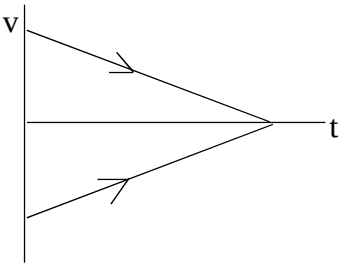
a) 160 b) 20 c) 90 d) 10

6. A body is thrown vertically upwards. Which of the graphs represents velocity of the body with time correctly?

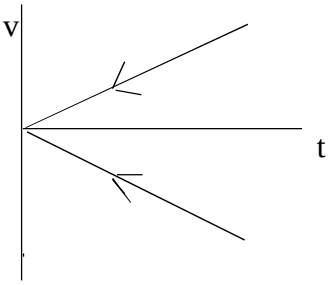
a)



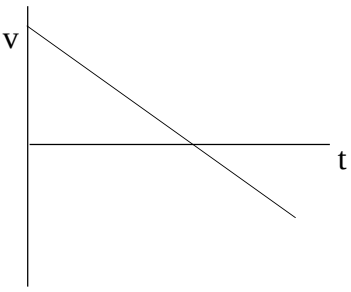
b)



c)



d)



Graphs and related problems:

7. A ball is projected from the ground vertically upwards with a velocity of 50 m/s and another is dropped from the height of 200 m above the ground. When and where are they going to meet together above the ground?

a) 4 s, 120 m b) 4 s, 80 m c) 3 s, 150 m d) 2 s, 100 m

8. The acceleration of the car that comes to rest from a velocity of 10 m/s in a distance of 25 m is?

(in m/s^2)

a) -2 b) -4 c) -8 d) -16

9. A stone falls freely from rest and the total distance covered by it in the last second of its motion is same as the distance covered by it in the first 3 seconds of its motion. The stone remains in the air for

a) 6 s b) 5 s c) 7 s d) 4 s

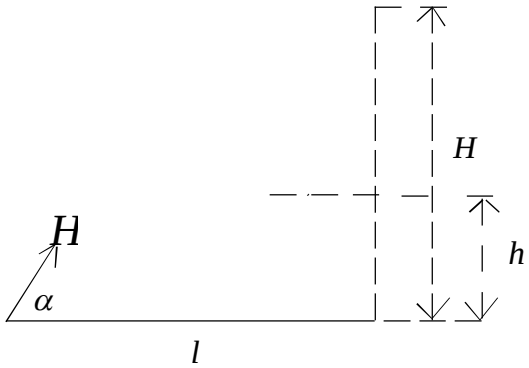
10. With what velocity must a ball be thrown down for it to bounce 10 m higher than the original level? Neglect any loss of energy due to bouncing.

a) 14 m/s b) 20 m/s c) 5 m/s d) none

11. A car accelerates from rest at a constant rate 'a' for some time, after which it decelerates at a constant rate 'b' and comes to rest. If the total time elapsed is 't' then the maximum velocity acquired is

a) $\frac{a^2+b^2}{ab}t$ b) $\frac{a^2-b^2}{ab}t$ c) $\frac{a+b}{ab}t$ d) $\frac{a\,b}{a+b}t$

12. A body falls freely from some altitude H. At the moment the first body starts falling another body is thrown from the ground, which collides with the first at an altitude of h = H/2. Find the initial velocity and the angle at which it was thrown.



Date: 13-07-2011