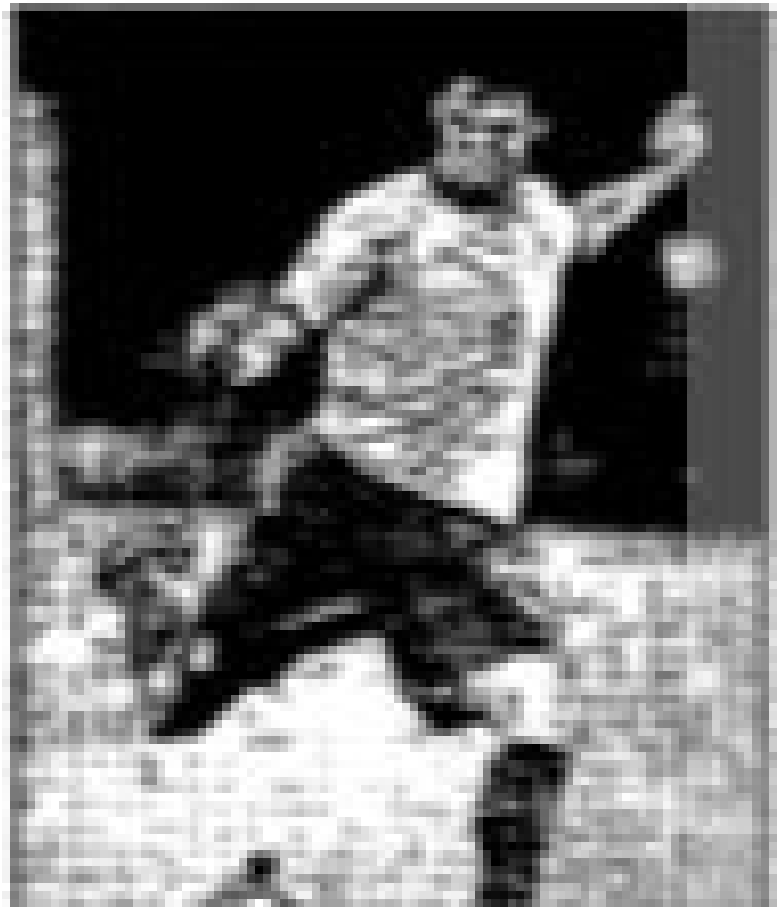
PHYSICS

BOOKS - BEIITIANS

MOTION

Formative Worksheet

1. When you play soccer,the motion described by the football is



A. Curvilinear

B. Circular

C. Oscillatory

D. Non-uniform

Answer:

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2. Which of the following statement is not correct?

A. Needle of sewing machine undergoes circular motion

B. Motion of body thrown upward at an angle is curvilinear

C. Movement of the earth around the sun is circular

D. Ball dropped from a height is rectilinear

Answer: 1

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3. Which of the following is not an example of translatory motion?

A. A freely falling stone

B. A coin moving over carom board

C. A car moving along a curved road

D. A ceiling fan

Answer:

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4. Which of the are examples of circular motion?

A. Revolution of earth around the sun

B. Motion of the tip of the seconds hand of a wall clock

C. Both

D. none

Answer:

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5. The motion of a simple pendulum is

A. Rectilinear

B. Curvilinear

C. Periodic

D. Rotatory

Answer:

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6. Raju travels the path HS home to school and SH to reach his home back from school.He leaves to school every day at 9.00 AM and back to home by 3.30 PM. Find the displacement.

and distance transversed by him in this time.

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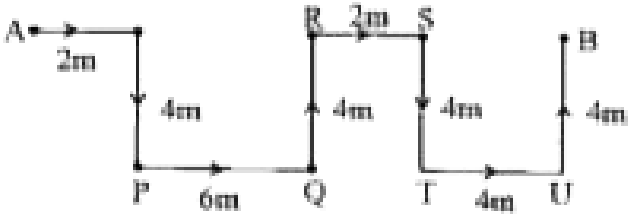
7. Find the distance and displacement if the body moves from A to B along the path APQRSTUB.



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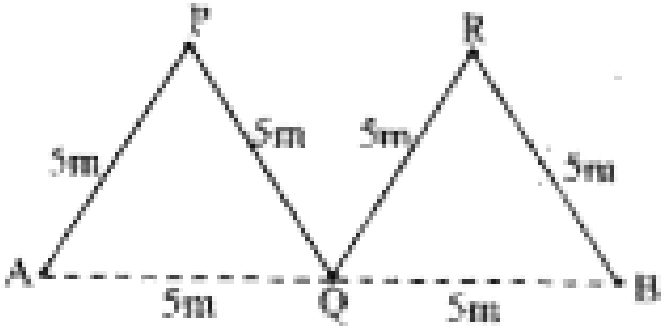
8. Find the distance and displacement if the body moves from A to B along the path APQRB.



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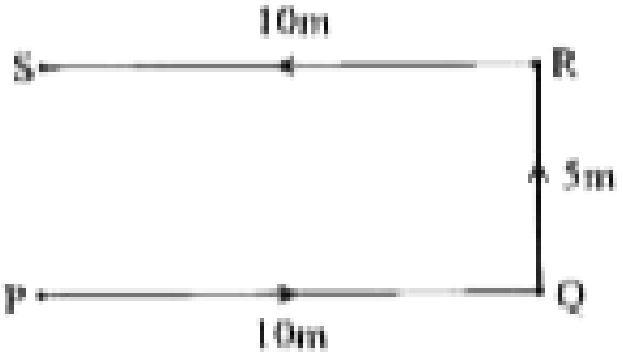
9. A body moves from P to S travelling along the path PQRS.

Calculate displacement.



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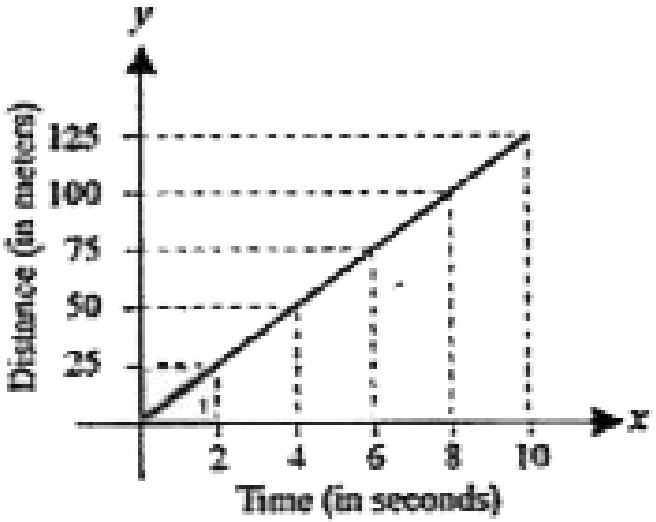
10. The distance versus time graph of a car is shown in the given figure.



A. car is moving at a uniform speed

B. speed of the car is increasing uniformly

C. car travels a distance of 25 m in each second

D. distance traveled by the car is inversely proportion to time

Answer:

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11. The distance between Paula's house and her school is 12 km. The distance between her school and the public library is 6 km, whereas the distance between the public library and her house is 15 km. Paula reaches her school from home in half an hour and then takes another 15 minutes to reach the public library. She further takes 15 minutes to come back home from the public library. What was Paula's average speed during the entire trip?

A. 11 km/h

B. 22 km/h

C. 33 km/h

D. 44 km/h

Answer:

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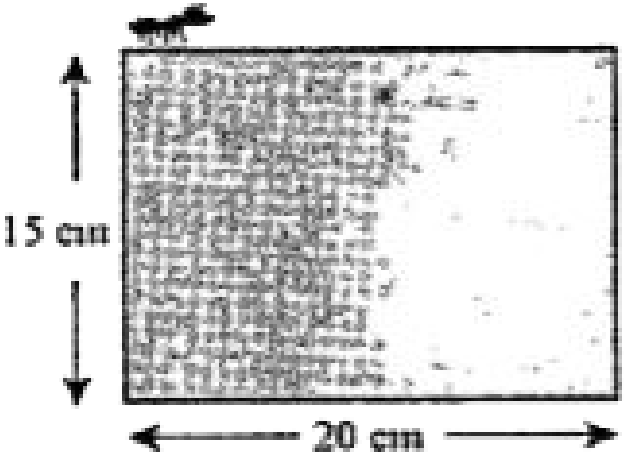
12. An ant is moving around a book, as shown in the given figure. It travels around the book once in every five minutes. What is the ant's average speed?



A. 0.1cm/s

B. 0.2cm/s

C. 0.3cm/s

D. 0.4cm/s

Answer:

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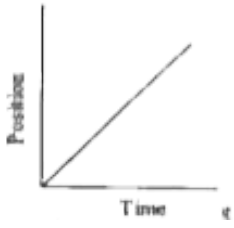
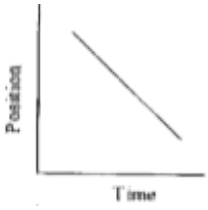
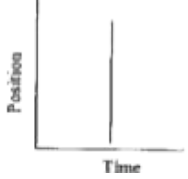
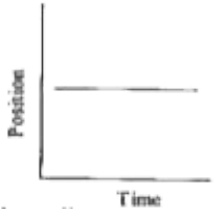
13. Which position versus time graph represents a stationary body?

A. 

B. 

C. 

D. 

Answer:

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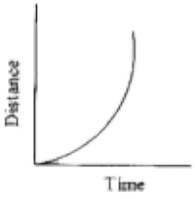
14. A boy is cycling at a constant speed. His distance versus time graph will look like

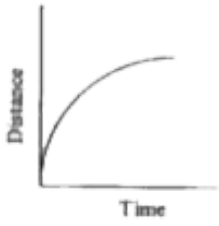
A. 

B.



C.

D.



Answer:

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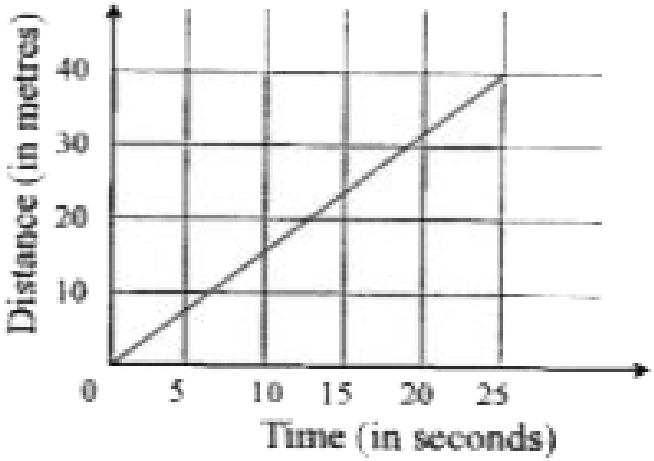
15. The distance versus time graph of a ball moving with a constant speed is shown in the given graph.



A. 1.2m/s

B. 1.6m/s

C. 12.0m/s

D. 16.0m/s

Answer:

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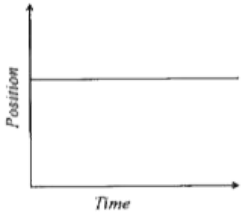
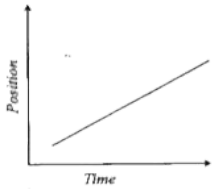
16. Which of the following position versus time graphs represents a a body at rest?

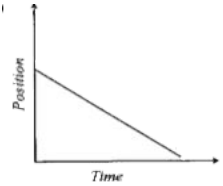
A.



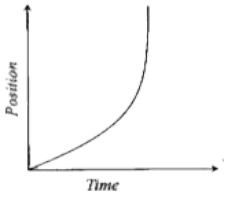
B.



C.



D.



Answer:

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Conceptive Worksheet

1. Every oscillatory motion is necessarily periodic but every periodic motion need not be oscillatory. Justify.

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2. Passengers sitting in a moving train are in___ with respect to platform, but in___with respect to co-passengers in the train ?

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3. A body is said to be in___ if it changes its position with respect to surroundings with time.

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4. Motion of pendulum of a clock is an example of

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5. The total path covered by a body is called.

A. Distance

B. Displacement

C. Speed

D. Velocity

Answer:

Watch Video Solution

6. The shortest distance travelled by a body is called its

A. Distance

B. Displacement

C. Speed

D. Velocity

Answer:

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7. The MKS unit of distance is

A. foot

B. meter

C. second

D. Centimetre

Answer:

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8. 1 MKS unit of distance =_____CGS unit of distance

A. 1

B. 16

C. 100

D. 1000

Answer:

Watch Video Solution

9. If a body completes I round of a circular path of radius 7 cm, its displacement is

A. Zero

B. 14 cm

C. 22 cm

D. 44 cm

Answer:

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10. Which of the following relations is correct?

A. speed =Distance x Time

B. speed $= \frac{\text{Distance}}{\text{Time}}$

C. speed $= \frac{\text{Time}}{\text{Distance}}$

D. speed $= \frac{1}{\text{Distance x Time}}$

Answer:

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11. The ratio of CGS unit to SI unit of speed is,___

A. $1:100$

B. $100:1$

C. $1000:1$

D. $1:1000$

Answer:

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12. Speed is a___

A. Vector quantity

B. Scalar quantity

C. Fundamental quantity

D. none

Answer:

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13. If a body covers unequal distances in equal intervals of time, then the body is said to move under

A. Uniform speed

B. Non- uniform speed

C. Uniform Velocity

D. Non- uniform velocity

Answer:

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14. A particle moving with uniform speed

A. The particle must be at rest

B. The particle moves along a curved path

C. The particle moves along a circle

D. The particle moves along a straight line,

Answer:

Watch Video Solution

15. If a particle covers equal distance in equal time intervals, it is said to be in.

A. Uniform Speed

B. Non uniform speed

C. Moving faster

D. Moving slower

Answer:

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16. A bus travels a certain distance with a speed 30. ms^{-1} and returns with a speed 20ms then find average speed during total journey?

A. 25 m/sec

B. 20 m/sec

C. 24 m/sec

D. 15 m/sec

Answer:

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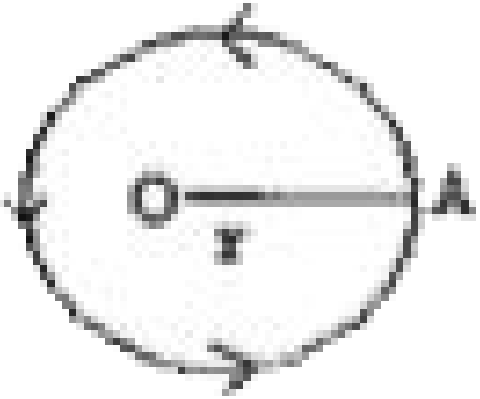
17. When body starts at 'A' and comes to 'A' again as shown by fig, then the dispalcement is (r is radius)



A. 2 π r

B. 2r

C. 0

D. $\frac{r}{2}$

Answer:

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18. Speedometer of a car measures

A. Average speed

B. Uniform speed

C. Instantaneous speed

D. Distance travelled

Answer:

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19. A body cover 20 m in 1 second, 25 m in 2nd second and 45 m in 34 second. What is the average speed of the body

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20. A car starts at point A with a speed of 40 kmph and reaches point B. Then the car returns to the starting point A with a speed of 60 kmph. What is average speed of the car?

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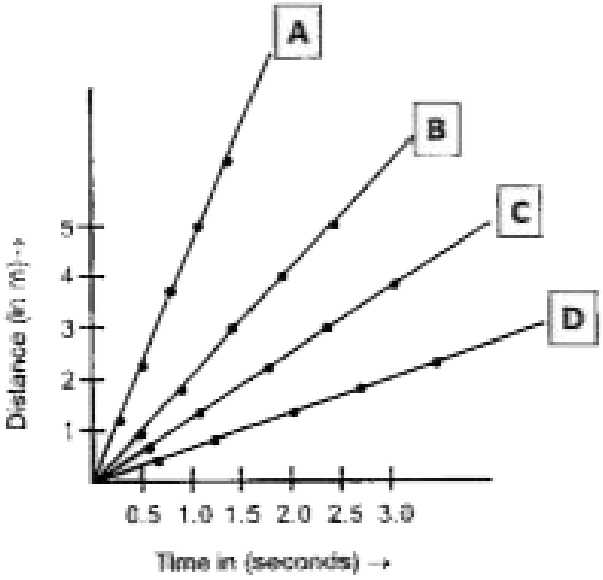
Summative Worksheet

1. The graph give below represents the motion of four animals A, B, C and D along a straight line. Identify the one

that is moving fastest among the four.



A. A

B. B

C. C

D. D

Answer:

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2. A car travels a certain distance with a speed of 50 km/h and returns with a speed of 40 km/h. Calculate the average speed for the whole journey.

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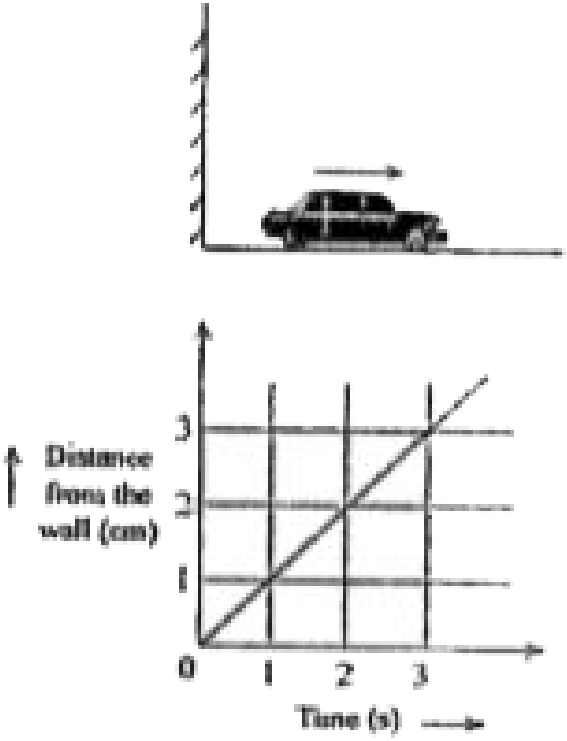
Hots Worksheet

1. A toy car is moving away from a wall, as shown in the given figure. As time increases, the distance of the car from the wall also increases, as depicted in the graph. The

hypothesis that can be derived from the given graph is



A. Distance of the car from the wall=Time

B. Distance of the car from the wall = 2x Time

C. Distance of the car from the wall = $\frac{\text{Time}}{2}$

D. Distance of the car from the wall= $\frac{\text{Time}}{3}$

Answer:

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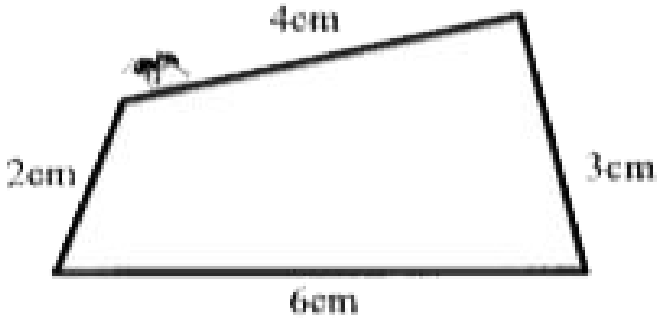
2. Julian is recording the time take by an ant to travel on the edges of a wooden structure, shown in the given figure. He is amazed to observe that the ant takes exactly one second to travel the length of each edge. Distance covered in 3rd second is -



A. 6cm

B. 4cm

C. 3cm

D. 2cm

Answer:

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3. The reading of the odometer of a bus, which is about to start its journey, is 42124 km. It reaches its destination after 5 h travelling at a uniform speed of 40 km/h. The odometer of the bus now reads

A. 42194 km

B. 42244 km

C. 42324 km

D. 42384 km

Answer:

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4. The odometer of a scooter reads 14316.0 km. The person is moving with a uniform speed of 30 m/s and reaches his destination after 20 minutes. What is the reading of the odometer when the rider reaches his destination?

A. 14280.0 km

B. 14316.0 km

C. 14332.0 km

D. 14352.0 km

Answer:

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5. In a race, Zaheer and Abbas run with a speed such that the former takes thrice the time more than the latter to cover a distance. What is the ratio of the speeds of Abbas and Zaheer?

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6. A cyclist is travelling with a uniform speed on a straight road. After traveling 700 m, one of the tyres of the cycle got punctured. He decided to cover the rest of the distance (300 m) by walking with the cycle. He covers the remaining 300 m in 7 minutes. If the cyclist takes a total of 12 minutes to

complete his journey, then what is his average speed during the journey?

A. 23.81 m/min

B. 61.28 m/min

C. 83.33 m/min

D. 97.48 m/min

Answer:

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7. Raj can run twice as fast as Lokesh. Raj runs for 10 min to cover the circumference of a playground. How much time

will Lokesh take to cover the circumference of the playground?

A. 5min

B. 10min

C. 20min

D. 40min

Answer:

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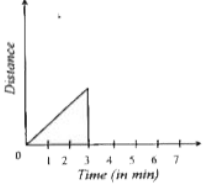
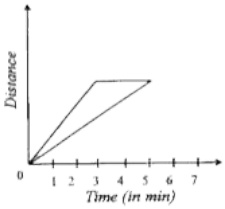
8. A car moves from point M to point N with uniform speed in 3 min. There, the car remains standing for 2 min. Then, it comes back to point M with uniform speed in 2 minutes.

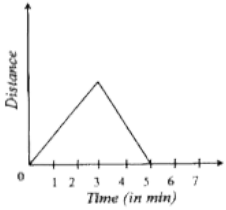
A.



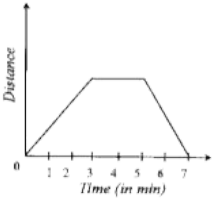
B.



C.



D.



Answer:

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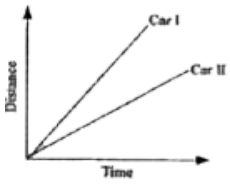
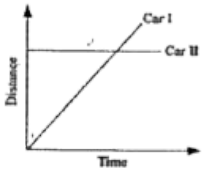
9. Consider the following statements: Car I is parked near a post office II. Car II is moving along a straight road with uniform speed Which of the following distance?time graphs represents the motion of the respective cars?

A.



B.



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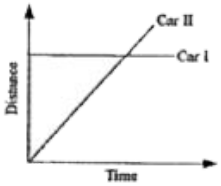

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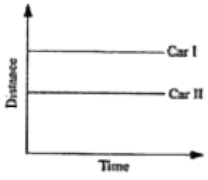

Answer:

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10. An airplane starts its journey from Delhi to Chennai at 8:50 am. When it lands at Chennai airport, the clock time is 11:15 am. The shortest distance between Delhi and Chennai is 2095 km. What was the speed of the airplane during its journey?

A. 14.48 m/s

B. 28.96 m/s

C. 240.80 m/s

D. 481.60 m/s

Answer:

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11. A car is moving with a speed of 53 km/h. it can cover a distance of 318 km in

A. $\frac{1}{6}$ h

B. $\frac{1}{12}$ h

C. 6h

D. 12h

Answer:

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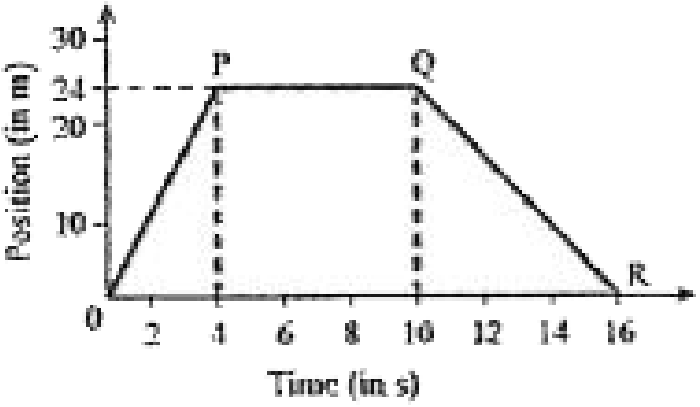
Iit Jee Worksheet Single Correct Answer Type I

1. The position versus time graph of the motion of a boy along a straight path is shown in the given figure. The total time for which the boy remains in motion is



A. 16 s

B. 10 s

C. 9 s

D. 4 s

Answer:

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2. While sitting in the car Zaheer observes that there is no change in the odometer reading of the car . It can be concluded from Zaheer's observation that the car is

A. at rest

B. gaining speed

C. moving uniformly

D. reducing speed

Answer:

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3. There is some problem in the speedometer of Raju's car. It always indicates a value twice the actual value. One day, he drives the car to a mechanic shop for repair. The shop is 100 km from his house. It takes 5 h to reach the destination with a constant speed. What will be the reading of the speedometer?

A. 20km/h

B. 40km/h

C. 250km/h

D. 500km/h

Answer: B

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4. Ajay and Rahul, are participating in a 100 m race. Ajay runs with a speed of 5 m/s. Rahul takes 5 s more than Ajay to complete the race.What is the speed of Rahul?

A. 4.0m/s

B. 4.5m/s

C. 5.5m/s

D. 6.0m/s

Answer:

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5. A boy ran for 30 minutes and then walked for the same time to cover a total distance of 2.5 km. The boy runs with a speed of 4 km/h. The boy walks with a speed of

A. 1.0km/h

B. 1.5km/h

C. 2.5km/h

D. 3km/h

Answer:

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6. Rohit saw that its odometer reading was 1020 km. Before getting off the car, he saw that the odometer reading was

1041 km. The speed of the car remained 14 m/s throughout the journey. What is the time taken by the car?

A. 400s

B. 800s

C. 1400s

D. 1500s

Answer:

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7. At the start of the journey, Ram saw that the odometer reading is 1500 km. He reached the spot in 2 h. He was

travelling with a uniform speed of 100 km/h. What is the final reading of the odometer?

A. 200km

B. 700km

C. 1300km

D. 1700km

Answer:

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8. Ram can run twice as fast as Shyam. Shyam runs for 5 minutes and Ram runs for 10 minutes. Distances covered by

Ram and Shyam are d1 and d_2 respectively. What is the ratio d1:d2?

A. $1:4$

B. $1:2$

C. $2:1$

D. $4:1$

Answer:

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Iit Jee Worksheet Multiple Correct Answer Type Ii

1. Metre is the SI unit of

A. Length

B. distance

C. displacement

D. speed

Answer:

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2. Which of the following is the unit of speed?

A. Metre per second

B. Centimetre per second

C. Kilometre per hour

D. Miles per hour

Answer:

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3. Which of the following are examples for periodic motion?

A. The motion of the carth round the sun is periodic.

B. The swinging pendulum of a wall clock.

C. The needle of a sewing machine running at constant speed.

D. A car moving on a straight road.

Answer:

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4. Which of the following describe random motion?

A. A buzzing bee.

B. A football player on the field.

C. A car moving on a circular road.

D. The flying motion of a sparrow.

Answer:

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5. Which of the following is an effect of force

A. Moving a body at rest

B. Stopping a ball in motion.

C. Changing the direction of motion.

D. Changing the speed of a body in motion.

Answer:

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Iit Jee Worksheet Paragraph Type Iii

1. The actual length covered by a moving body in between two points irrespective of the direction in which the body is moving is called distance displacement is the shrtest distance between two points

The units of both distance and displacement are metre and centimeter

If a body completes one complete revolution in a circular path, then

A. distance=0

B. magnitude of displacement =0

C. Both (A) and (B) are correct

D. None of these

Answer:

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2. The actual length covered by a moving body in between two points irrespective of the direction in which the body is moving is called distance displacement is the shrtest distance between two points

The units of both distance and displacement are metre and centimeter

A man leaves his house at 5.00 a.m. for a morning walk for 2km and returns at 6.00. a.m. What is his displacement traversed by him in this time?

A. 4 km

B. 8 km

C. 2 km

D. zero

Answer:

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3. The actual length covered by a moving body in between two points irrespective of the direction in which the body is moving is called distance displacement is the shrtest distance between two points

The units of both distance and displacement are metre and centimeter

In the above question, what is the distance travelled by the man?

A. 4 km

B. 8 km

C. 2 km

D. zero

Answer:

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Iit Jee Worksheet Integer Type Iv

1. A body is moving with a speed of 36 kmph. Its speed=___m/s.

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2. A body is moving along a circular path and 2012 revolutions round it. What is the total displacement of the body?

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3. A body covers a distance of 3.6km in I hour. The speed of the body is___m/s.

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Iit Jee Worksheet Matirx Matching

1.

Column-I	Column-II
(A) A car moving on a straight road	(p)Periodic motion
(B)A javelin thrown by an athlete	(q)Rotatory motion
(C)Motion of a potter 's wheel	(r)Curvilinear motion
(D)Motion of heart beats	(s)Translatory motion

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