

## Speed & Distance - Solved Examples

**Q 1 - What is meters/sec for 54 km/hr?**

A - 15 m/sec

B - 20 m/sec

C - 25 m/sec

D - 30 m/sec

**Answer - A**

**Explanation**

$$54 \text{ km/hr} = (54 \times 5/18) \text{ m/sec} = 15 \text{ m/sec}.$$

**Q 2 - What is km/hr for 16 m/sec?**

A - 53.6km/hr

B - 55.6km/hr

C - 57.6km/hr

D - 59.6km/hr

**Answer - C**

**Explanation**

$$16 \text{ m/sec} = (16 \times 18/5) \text{ km/hr} = 288/5 \text{ km/hr} = 57.6 \text{ km/hr}.$$

**Q 3 - Anita can cover a sure separation in 1 hr 24min by covering two-third of the separation at 4km/hr and the rest at 5 km/hr. Find the aggregate separation.**

A - 3 kms

B - 4 kms

C - 5 kms

D - 6 kms

**Answer - D**

**Explanation**

Let the aggregate separation be  $x$  km.

Then,  $\frac{2}{3}x/4 + \frac{1}{3}x/5 = 7/5$

$$\Rightarrow x/6 + x/15 = 7/5$$

$$\Rightarrow 5x + 2x = 42$$

$$\Rightarrow 7x = 42$$

$$\Rightarrow x = 6.$$

$$\therefore \text{Total separation} = 6 \text{ km}$$

**Q 4 - A man strolls from his home to the railroad station. On the off chance that he strolls at 5 km/hr, he misses a train by 7 minutes. However, on the off chance that he strolls at 6km/hr, he achieves the station 5 minute before the flight of the train. Discover the separation secured by him to achieve the station.**

A - 5 kms

B - 6 kms

C - 7 kms

D - 8 kms

**Answer - B**

**Explanation**

Let the required separation be  $x$  km. At that point,  
 $x/5 - x/6 = 12/60$  (distinction between two time interims is 12 min.)  
 $\Rightarrow x/5 - x/6 = 1/5$   
 $\Rightarrow 6x - 5x = 6$   
 $\Rightarrow x = 6$   
Required separation = 6 kms

**Q 5 - Strolling at  $7/8$  of its typical velocity, a train is 10 minutes past the point of no return. Locate its standard time to cover the trip?**

A - 60 min

B - 70 min

C - 80 min

D - 90 min

**Answer - B**

**Explanation**

New speed =  $7/8$  of its standard velocity  
New time taken =  $8/7$  of the standard time.  
( $8/7$  of the standard time) - (common time) = 10 min.  
 $\Rightarrow 1/7$  of the standard time = 10 min  
 $\Rightarrow$  usual time = 70 min.

**Q 6 - Hitesh covers a sure separation via auto driving at 70 km/hr and returns back to the beginning stage riding on a bike at 55km/hr. locate his normal velocity for the entire trip?**

A - 62.6 km/hr

B - 61.6 km/hr

C - 60.6 km/hr

D - 59.6 km/hr

**Answer - B**

**Explanation**

$$\begin{aligned}\text{Normal velocity} &= 2xy/(x+y) \text{ km/hr} = (2*70*55)/(70+55) \text{ km/hr} \\ &= (2*70*55)/125 \text{ km/hr} = 308/5 \text{ km/hr} = 61.6 \text{ km/hr}\end{aligned}$$

**Q 7 - The separation between two stations A and B is 450 km. A train begins at 4 pm from A and moves towards B at a normal velocity of 60 km/hr. Another train begins from B at 3.20 p.m and moves towards A at a normal velocity of 80 km/hr. How a long way from A will the two train s meet and what time?**

A - 6:50 pm

B - 5:50 pm

C - 4:50 pm

D - 3:50 pm

**Answer - A**

**Explanation**

Assume two trains meet at  $x$  km from A

(time taken by B to cover  $(450-x)$  km - (time taken by A to cover  $x$  km) =  $40/60$

$\Rightarrow (450-x)/80 - x/60 = 40/60$  ?  $3(450-x) - 4x = 160$

$\Rightarrow 7x=1190 \therefore x = 170$

In this way the two trains meet at a separation of 170 km from A.

Time taken by A to cover 170 km =  $170/60 = 2\text{hrs } 50 \text{ min.}$

Along these lines, the two trains meet at 6:50 pm

**Q 8 - A man cycles from A to B, a separation of 21 km in 1 hr 40 min. The street from A is level for 13 km and afterward it is tough to B. The man's normal rate on level is 15 km/hr. Locate his normal tough pace?**

A - 10 km/hr

B - 11 km/hr

C - 12 km/hr

D - 13 km/hr

**Answer - A**

**Explanation**

Let the normal tough rate be  $x$  km/hr. at that point,

$13/15 + 8/x = 5/3$

$\Rightarrow 8/x = (5/3 - 13/15) = 12/15 = 4/5$

$\Rightarrow x = (8*5)/4 = 10$

$\therefore$  Normal tough rate = 10 km/hr

**Q 9 - A hoodlum is spotted by a policeman from a separation of 100 meters. At the point when the policeman begins the pursuit, the criminal likewise begin s running. In the event that the pace of the criminal be 8km/hr and that of the policeman 10 km/hr, how far the hoodlum will have keep running before he is overwhelmed?**

A - 200 m

B - 300 m

C - 400 m

D - 500 m

**Answer - C**

**Explanation**

Relative pace of the policeman =  $(10-8)$  km/hr = 2 km/hr

Time taken by policeman to cover 100 m =  $(100/1000*1/2)$  hr =  $1/20$  hr

In  $1/20$  hr, the cheat covers a separation of  $(8*1/20)$  km =  $(2/5)$  km =  $(2/5*1000)$  m = 400 m

**Q 10 - I walk a sure separation and ride back setting aside an aggregate time of 37 minutes. I could walk both routes in 55 minutes. To what extent would it take me to ride both ways?**

A - 18 min

B - 19 min

C - 20 min

D - 21 min

**Answer - B**

**Explanation**

Let the given separation be  $x$  km. At that point,

(Time taken to walk  $x$  km) + (time taken to ride  $x$  km) = 37 min.

=> (time taken to walk  $2x$  km) + (time taken to ride  $2x$  km) = 74 min.

=> 55 min + (time taken to ride  $2x$  km) = 74

=> time taken to ride  $2x$  km = 19 min.

**Q 11 - A and B are two stations 390 km separated. A train begins from A at 10 am and ventures towards B at 65 kmph. Another train begins from B at 11 am and towards A at 35 kmph. At what time they meet?**

A - 2.15 pm

B - 3.15 pm

C - 4.15 pm

D - 5.15 pm

**Answer - A**

**Explanation**

Assume they meet  $x$  hours after 10 am then,  
(separation moved by first in  $x$  hrs.) + (separation moved by second in  $(x-1)$  hrs) = 390  
 $\therefore 65x + 35(x-1) = 390$   
 $\Rightarrow 100x = 425$   
 $\Rightarrow x = 17/4$   
In this way, they meet 4 hrs 15 min. after 10 am at 2.15 pm

**Q 12 - A products train leaves a station at a sure time and at a settled rate. Following 6 hours, an express prepare leaves the same station and moves in the same bearing at a uniform velocity of 90 kmph. This train makes up for lost time the merchandise train in 4 hours. Discover the velocity of the merchandise train.**

A - 33 kmph

B - 34 kmph

C - 35 kmph

D - 36 kmph

**Answer - B**

**Explanation**

Let the velocity of the merchandise train be  $x$  kmph.

Separation secured by products train in 10 hours = separation secured by express prepare in 4 hours

$$\therefore 10x = 4 \times 90 \text{ or } x = 36$$

Along these lines, rate of products train = 36 kmph