Speed Distance Formulas

Speed: A measure of how quickly an object moves from one place to another.

It is equal to the distance travelled divided by time.

Speed = distance / time.

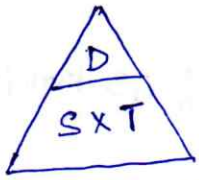
i.e. The distance travelled by a body or vehicle in a unit time is known as its speed.

Distance: Distance is a path covered by a moving object (person or vehicle).

distance = speed × time.

Time: Time = distance / speed.

Note: The unit of time in speed should be the same as that of the given time.



S - Speed → (mts/sec.).
d - distance → mts
t - time → sec.

* In some cases, we need to convert mts/sec. to km/hr. & vice-versa.

Eg:

Speed related problems:

1. Shreya travelled a distance of 234 Km. by car in 6 hrs. Find the speed of the car.

distance = 234 kms.
time = 6 hrs.
speed = $d/t = \frac{234}{6} = 39$ kms./hr.

2. A car travels a distance of 495 kms. in 8½ hrs. What is its speed.

distance = 495 kms.
time = 8½ hrs.
speed = $d/t = \frac{495}{8.5} = \frac{4950}{85} = \frac{990}{17} = 58.23$ kms/hr.

Distance related problems:

1. How much distance will be covered in 6 hrs. at a speed of 45 km/hr.

speed (s) = 45 km./hr.
time (t) = 6 hrs.
distance (d) = s x t
= 45 x 6 = 270 kms.

2. How much distance will be covered in 4 hrs. at a speed of 72 km/hr.

time (t) = 4 hrs.
speed (s) = 72 kms./hr.
distance (d) = s x t
= 72 x 4
= 288 kms.

3. A bus travels at a speed of 45 km./hr. How far will it travel in 36 minutes.

speed (s) = 45 km./hr.
time (t) = 36 mins. = 36/60 hrs.
distance (d) = s x t
= 45/3 x 36/60 = 27 kms.

Time related problems:

1. How much time will be taken to cover a distance of 550 km. at a speed of 50 km./hr.

distance (d) = 550 km.
speed (s) = 50 km./hr.
time (t) = d/s = 550/50 = 11 hrs.

2. A motorized rickshaw covers a distance of 120 Km at a speed of 30 Km./hr. Find the time taken to cover this distance.

distance (d) = 120 Km.
speed (s) = 30 Km./hr.
time (t) = $d/s = \frac{120}{30} = 4$ hrs.

I. Find the Speed, distance, and time of the following

a. Distance = 320 Km.
Time = 3 hrs.
speed = ?

b. Distance = 428 Km.
Time = 4 hrs.
speed = ?

c. Speed = 45 Km./hr.
Time = 5 hrs.
Distance = ?

d. Speed = 30 Km/hr
Time = 4 hrs.
Distance = ?

e. Speed = 35 Km./hr
Time = 120 mins.
Distance = ?

f. Speed = 55 Km./hr
Time = 180 mins.
Distance = ?

g. Distance = 440 Km.
Speed = 20 Km./hr.
Time = ?

h. Distance = 690 km.
Speed = 30 km./hr.
Time = ?

II. Solve the following.

a. Surya travelled a distance of 755 km. by car in 5 hrs. Find the Speed.

b. A car travels a distance of 330 km. in $3\frac{1}{2}$ hrs. what is its speed.

c. How much distance will be covered in 4 hrs. at a speed of 30 km per hour

d. How much distance will be covered in 7 hrs. at a speed of 82 km./hr

e. A car travels at a speed of 35 km/hr. How far will it travel in 420 mins.

f. A bus travels at a speed of 40 km./hr. How far will it travel in 90 mins.

g. How much time will be taken to cover a distance of 390 km at a speed of 50 km./hr.

h. How much time will be taken to cover a distance of 840 km. at a speed of 40 km./hr.

i. How much time will be taken to cover 20 m at a speed of 20 cms/sec.

j. A man runs at a speed of 15 km./hr. How much time will he take to cover 750 mts.