**Exercises**

1.)   A car travels and average speed of 75 kph. If it traveled for 3.5 hours, what is the total distance traveled?

d = rt  
d = (75 kph)(3.5 hrs) =  
d = 262.5 km

2.) A bus traveled 4 hours from City A to City B which is 450 kilometers apart. What is its average speed?

d = rt  
450 km = (4 hrs)(r)  
r = (450 kph)/(4 hrs)  
r = 112.5 km

**Problem**

1.) Two cars left City A at 8:00 am going to City B using the same route. Car 1 traveled at the average speed of 60 kph while Car 2 traveled at an average speed of 50kph. At what time were the two cars 25 kilometers apart?

Let x = time traveled by the two cars  
60x – 50x = 25  
10x = 25  
x = 25/10  
x = 2.5 hours

2.5 hours = 2hours and 30 mins  
2 hours and 30 minutes after 8:00 am is 10:30 am.

Answer: 10:30 AM

2.) The road distance from Sapiro City to Lireo City is 195 km. Car 1 left Sapiro City going to Lireo City at an average speed of 70kph. Car 2 left City Lireo City going to Sapiro City at an average speed of 60 kph. If both cars left the two cities at the same time and use the same road, after how many hours will the two cars meet?

Car 1  
Rate = 70kph  
Time = x  
Distance = 70x

Car 2  
Rate = 60kph  
Time = x  
Distance = 60x

Total distance = 195kph

70x + 60x = 195  
130x = 195  
x = 195/130

x = 1.5hrs

3.) A red car left Vigan at 9:00 AM and traveled to Manila at an average speed of 45 kph. After one hour, a white car left the same place for Manila using the same route at an average speed of 60 kph. At what time will the white car overtake the red car?

RED CAR  
Rate = 45kph  
Time = x+1  
Distance = 45(x+1)

WHITE CAR  
Rage = 60kph  
Time = x  
Distance = 60x

60x = 45(x+1)  
60x = 45x+45  
60x – 45x = 45  
15x = 45  
x = 45/15  
x = 3hours

3 hours after 10:00am is 1:00 p.m.

Note: We add 3 hours to 10:00 am because the second car left at 10:00 am.

Answer: 1:00pm noon

4.) Two cars started from the same point, at 12nn, traveling to opposite directions at 50 and 60 kph, respectively. What is the distance between them at exactly 3:30 PM?

CAR 1  
Rate = 50kph  
Time = 3.5 hrs  
Distance = (50 kph)(3.5 hrs) = 175

CAR 2  
Rate = 60kph  
Time = 3.5 hrs  
Distance = (60 kph)( 3.5 hrs) = 210

What is the distance between them at exactly 3:30 PM?  
175 km + 210 km = 385 km

5.) Two cars from the same point traveling to opposite directions at 75 and 85 kph, respectively. After how many hours will they be 240 kilometers apart?

75x + 85x = 240  
160x = 240  
240/160 = x  
x = 1.5 hours

6.) A blue car leaves City A for City B at exactly 8:00 AM traveling at average speed of 55 kph. A gray car leaves City B for City A at the same time traveling at an average speed of 45 kph. The distance between the two cities is 75 kilometers.

If the two cars use the same route, what time will they pass each other?

let x be the time  
d = r x t

sum of the distance traveled by 2 cars is equal to 75km  
so

55x + 45x = 75  
100x = 75  
x = 75/100 or 0.75 hours  
0.75 hours (45 mins)

They will pass each other 45 mins after 8:00am so the answer is 8:45 am.

Answer: 8:45 am