

## SPEED TYPE PROBLEMS

**Example 8:** Jeanne took a trip from Brownsville to Montreal, a distance of 830 km. She travelled part of the way by bus and the rest of the way by plane. The bus averaged 40 km/h and the plane 500 km/h. The whole trip took 3.5 h. How many hours did she spend travelling by bus?

let  $b$  represent the time spent on the bus in hours  
 let  $p$  represent the time spent on the plane in hours

Distance = Speed $\times$ Time	Distance (km)	Speed (km/h)	Time (h)
Bus	$40b$	40	$b$
Plane	$500p$	500	$p$
TOTALS	830		3.5

PROBLEMS

$$40b + 500p = 830 \quad \textcircled{1} \text{ distance eq'n}$$

$$b + p = 3.5 \quad \textcircled{2} \text{ time eq'n}$$

$$\textcircled{2} \times (-500): -500b - 500p = -1750$$

$$\textcircled{1}: \quad \frac{40b + 500p = 830}{-460b = -920}$$

$$-460b = -920$$

$$\boxed{b = 2}$$

$\therefore$  Jeanne spent 2 h on the bus

- Fred took 7 h to drive from Cheyenne to Boothill, a total distance of 485 km. He drove most of the way at 80 km/h, but was slowed to 30 km/h for a time by a dust storm during the trip. How many hours did he spend driving through the dust storm?  $(5.5, 1.5)$   
 $\uparrow$
- It took the football team 5 h to travel from Titledown to Toronto, a total distance of 1320 km. Part of the trip was by bus and the remainder by plane. The bus averaged 40 km/h and the plane 600 km/h. How many hours were spent travelling by bus?  $(3, 2)$   
 $\uparrow$
- It is 395 km from Ski Valley to Vancouver. Sam made the trip in 6 h, travelling by bus and train. The train averaged 70 km/h and the bus 60 km/h. How much time was spent travelling by train?  $(3.5, 2.5)$   
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- The distance from the highway to Lake Snow was 160 km and Chris made the trip in 11 h. For the first part of the journey she used a snowmobile and travelled at 20 km/h. The last part of the trip was made on skis, where she averaged 10 km/h. How far did she travel on skis?  $(60, 100)$   
 $\uparrow$
- Sarah spent 2 h more travelling by train than she did by bus. The train averaged 70 km/h and the bus 50 km/h. The total distance travelled was 740 km. How far did she travel by bus?  $(490, 250)$   
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