Problem of the Week
Problem C and Solution
Moving Along

Problem

A car and a motorcycle left a gas station at the same time. They each travelled in the same direction for one and one-quarter hours. At that time, the car had travelled 20 km farther than the motorcycle. If the average speed of the car was 80 km/h, determine the average speed of the motorcycle.

Solution

We can calculate distance travelled by multiplying the average speed by the time.

In one and one-quarter hours at 80 km/h, the car would travel
$80 \times 1\frac{1}{4} = 80 \times \frac{5}{4} = 100$ km.

In the same time, the motorcycle travelled 20 km less. Therefore, the motorcycle has travelled $100 - 20 = 80$ km. Since the distance travelled is equal to the average speed multiplied by the time, then the average speed will equal the distance travelled divided by the time. Thus, the average speed of the motorcycle is equal to $80 \div 1\frac{1}{4} = 80 \div \frac{5}{4} = 80 \times \frac{4}{5} = 64$ km/h.

Therefore, the average speed of the motorcycle is 64 km/h.

Note: The calculations in this problem could be done using decimals by converting one and one-quarter hours to 1.25 hours.