Average Speed

PR09-V1 · storyboard · PR09 Average speed. Read each picture with its sentences.

Picture 1

Jack drives to work at 30 km/h and back home at 45 km/h. What is his average speed?

$$90 \div 30 = 3 \text{ h}, \quad 90 \div 45 = 2 \text{ h}$$ say 90 km each way

$$\boxed{\frac{180}{5} = 36 \text{ km/h}}$$

1. Jack drives to work at 30 kilometres per hour, and back home at 45.
2. What is his average speed?
3. Pick a distance: say 90 kilometres each way.
4. That is 3 hours there and 2 hours back.
5. 180 kilometres in 5 hours: 36 kilometres per hour.

Picture 2

Trap 30 and 45

$$\times \frac{30+45}{2} = 37.5$$

$$\checkmark \frac{180}{5} = 36$$

6. Watch for the trap: averaging the speeds.
7. Jack spends longer at the slower speed, so the average is closer to 30.

Picture 3

Jayne drives there at 20 km/h. How fast must she drive back to average 30 km/h?

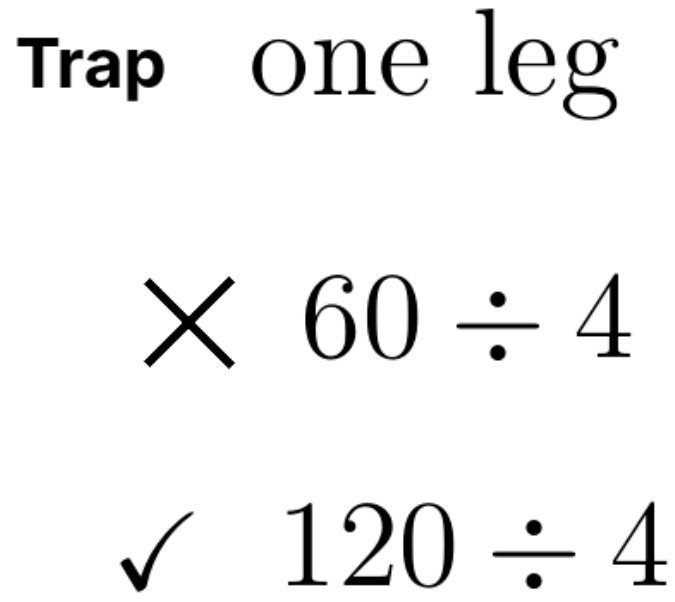
$60 \div 20 = 3 \text{ h there}$ say 60 km each way

$120 \div 30 = 4 \text{ h in all}$

$\boxed{60 \div 1 = 60 \text{ km/h}}$

8. Jayne drives there at 20 kilometres per hour.
9. How fast must she drive back to average 30?
10. Say 60 kilometres each way: 3 hours there.
11. The whole trip at an average of 30 takes 120 divided by 30: 4 hours.
12. That leaves 1 hour for the 60 kilometres back: 60 kilometres per hour.

Picture 4



13. Watch for the second trap: one leg with the whole trip.
14. Total distance goes with total time.