



Problem of the Week

Problem C and Solution

Uphill and Downhill

Problem

Rory biked 36 km up a trail from his campsite to a lookout point. On the way up, his average speed was 9 km/hr. On the way back down, he biked faster, with an average speed of 12 km/hr. What was his average speed, in km/hr, for the entire trip?

Solution

First we calculate the time it took Rory to bike up to the lookout point and back down to his campsite.

Rory's 36 km ride up to the lookout point at 9 km/hr took $36 \div 9 = 4$ hrs.

Rory's 36 km ride back down to his campsite at 12 km/hr took $36 \div 12 = 3$ hrs.

Thus, the total time was $4 + 3 = 7$ hrs.

Rory's trip up to the lookout point and back down to his campsite had a total distance of $36 + 36 = 72$ km. Therefore, the average speed for the entire trip was $72 \div 7 \approx 10.3$ km/h.