Answer on Question #46964, Physics, Other

Question:

Sally travels by car from one city to another. She drives for 27.0 min at 70.0 km/h, 50.0 min at 44.0 km/h, and 38.0 min at 75.0 km/h, and she spends 12.0 min eating lunch and buying gas.

(a) Determine the average speed for the trip. km/h

(b) Determine the total distance traveled. km

Answer:

Average speed equals:

$$v = \frac{S}{t}$$

where S - a total distance, t - a total time.

b) The total distance equals:

$$S = 27 \; min \cdot 70 \frac{km}{h} + 50 \; min \cdot 44 \frac{km}{h} + 38 \; min \cdot 75 \frac{km}{h} = 115.7 \; km$$

a) The total time equals:

$$t = 27 \; min + 50 \; min + 38 \; min + 12 \; min = 127 \; min = 2.12 \; hours$$

Average speed equals:

$$v = \frac{115.7}{2.12} \frac{km}{h} = 54.6 \frac{km}{h}$$