

Answer on Question #47763, Physics, Mechanics — Kinematics — Dynamics

Sally travels by car from one city to another. She drives for 27.0 min at 66.0 km/h, 45.0 min at 35.0 km/h, and 54.0 min at 80.0 km/h, and she spends 7.0 min eating lunch and buying gas. Determine the average speed for the trip.

Solution

The average speed is total distance divided by total time.

$$v_a = \frac{v_1 t_1 + v_2 t_2 + v_3 t_3}{t_1 + t_2 + t_3 + t_4} = \frac{66 \cdot 27 + 35 \cdot 45 + 80 \cdot 54}{27 + 45 + 54 + 7} \approx 57.7 \text{ km/h}$$