You are driving home from school steadily at 95 km/h for 180 km. It then begins to rain and you slow to 65 km/h. You arrive home after driving for 4.5 h. a) how far is your hometown from school? b) what was your average speed?

Driving time at 95 km/h:

$$t_1 = \frac{180 km}{95 \frac{km}{h}} \approx 1.9h$$

Your total time is 4.5h. Thus, driving time at 65 km/h is:

$$t_2 = t - t_1 = 4.5h - 1.9h = 2.6h$$

And traveled distance from school:

$$s = s_1 + s_2 = s_1 + v_2 t_2 = 180 km + 65 \frac{km}{h} \cdot 2.6h = 349\ km$$

Average speed is traveled distance divided by the total time:

$$v_{av} = \frac{s}{t} = \frac{349 km}{4.5h} \approx 77.6 \frac{km}{h}$$

Answer: distance from school is $s = 349\ km$

Average speed: $v_{av} \approx 77.6 \frac{km}{h}$