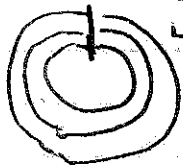


4. a) You velocity v time t
 Student velocity v $\frac{1}{3}$ the time

This student was 3 times faster than you.

b) Student $\frac{1}{5}$ your v

This student would take 5x longer to get to school compared to you.



5- The average velocity and average speed would not be the same. Average speed is a scalar quantity so the object travelled 12 km in 48s, however the average velocity is a vector so we need to include direction, because the object moved in the same direction and finished where it started there was no displacement and therefore no average velocity.

$$\vec{v}_{avg} = \frac{\vec{d}}{t} = 0 \text{ km/h}$$

$$v_{sp} = \frac{d}{t} \quad t = 48 \text{ s} \times \frac{1 \text{ h}}{3600 \text{ s}} = 0.0133 \text{ h}$$

$$v_{sp} = \frac{12 \text{ km}}{0.0133 \text{ h}}$$

$$v_{sp} = 902 \text{ km/h}$$

b. $d = 715 \text{ m}$
 $v_{sp} = 21 \text{ m/s}$
 $t = ?$

$$v_{sp} = \frac{d}{t}$$

$$t \cdot \frac{21 \text{ m/s}}{21} = \frac{715 \text{ m}}{21} \cdot t$$

$$t = \frac{715 \text{ m}}{21 \text{ s}} = 34 \text{ m/s}$$