Ex) A person walks first at a constant speed of 8.0 m/s along a straight line from Ⓐ to Ⓑ and then back along the line to Ⓐ at a constant 4 m/s.

a) What is his or her avg speed over the entire trip?

Ans: $v_{avg} = \frac{s}{\Delta t} = \frac{s_{AB} + s_{BA}}{\frac{s_{AB}}{8} + \frac{s_{BA}}{4}}$ but $s_{AB} = s_{BA} = s$

$= \frac{2s}{\frac{s}{8} + \frac{s}{4}} = \frac{2}{\frac{1}{8} + \frac{2}{8}} = \frac{2 \cdot 8}{3} = \frac{16}{3} = \boxed{5.3 \text{ m/s}}$

b) What was their average velocity?

Ans: $\vec{v}_{avg} \equiv \frac{\Delta \vec{x}}{\Delta t} = \frac{0}{\Delta t} = \boxed{0 \text{ m/s}}$