70. $v_{B/G} = ?$ $\quad v_{B/W} = 14\ km/h$

$v_{W/G} = -9\ km/h$

$\vec{v}_{B/G} = \vec{v}_{B/W} + \vec{v}_{W/G}$

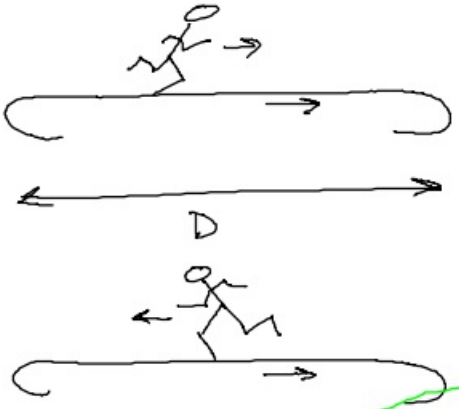
$= 14 + -9 = +5\ km/h$ (upstream)

c+d) $v_{c/G} = ?$ $\quad v_{c/G} = v_{c/B} + v_{B/G}$

$= -6\ km/h + 5\ km/h = -1\ km/h$

($1\ km/h$ downstream)

71.




$t = 2.5s$

$\frac{v_{m/s}}{v_{s/E}} = ?$

$t = 10s$

$\frac{\Delta x}{\Delta t} = v_{avg}$ $\quad \frac{D}{2.5} = v_{m/E}$ $\quad \vec{v}_{m/E} = \vec{v}_{m/s} + \vec{v}_{s/E}$ (1st trip)

$\frac{-D}{10} = v_{m/E}$ (2nd)

$\frac{D}{2.5} = v_{m/s} + v_{s/E}$

$\frac{-D}{10} = -v_{m/s} + v_{s/E}$

$D = 2.5v_{m/s} + 2.5v_{s/E}$ $\quad D = 10v_{m/s} - 10v_{s/E}$

$2.5v_{m/s} + 2.5v_{s/E} = 10v_{m/s} - 10v_{s/E}$

$12.5v_{s/E} = 7.5v_{m/s}$

$\frac{2.5}{15} = \frac{v_{m/s}}{v_{s/E}}$

$1.67 = \frac{v_{m/s}}{v_{s/E}}$