GRASP

G - given

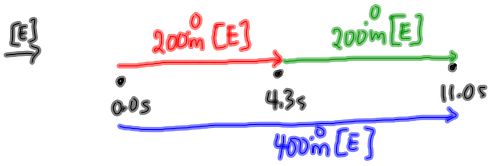
R - required

A - analysis (select an equation + rearrange if necessary)

S - solution (sub in values given and solve)

P - paraphrase

mp 142



a) G { $\Delta\vec{d} = 200.0\text{m}[E]$, $\Delta t = 4.3\text{s}$ } $\vec{V}_{ave} = \frac{\Delta\vec{d}}{\Delta t}$ } A

R { $\vec{V}_{ave} = ?$ } $\vec{V}_{ave} = \frac{200.0\text{m}[E]}{4.3\text{s}}$ } S

P { The average velocity for the first 200.0m is 47m/s [E] } $\vec{V}_{ave} = 47\text{m/s}[E]$

b) $\Delta\vec{d} = 200.0\text{m}[E]$

$\Delta t = 11.0\text{s} - 4.3\text{s} = 6.7\text{s}$

$\vec{V}_{ave} = ?$

$\vec{V}_{ave} = \frac{\Delta\vec{d}}{\Delta t}$

$\vec{V}_{ave} = \frac{200.0\text{m}[E]}{6.7\text{s}}$

$\vec{V}_{ave} = 30 \times 10^{1} \frac{\text{m}}{\text{s}}[E]$

The average velocity for the last 200.0m is $30 \times 10^{1} \frac{\text{m}}{\text{s}}[E]$

c) $\Delta\vec{d} = 400.0\text{m}[E]$

$\Delta t = 11.0\text{s}$

$\vec{V}_{ave} = \frac{\Delta\vec{d}}{\Delta t}$

$\vec{V}_{ave} = \frac{400.0\text{m}[E]}{11.0\text{s}}$

$\vec{V}_{ave} = 36.4\text{m/s}[E]$

The average velocity for the whole trip is 36.4m/s [E]

Note that $\vec{V}_{ave}$ for the whole trip IS NOT:

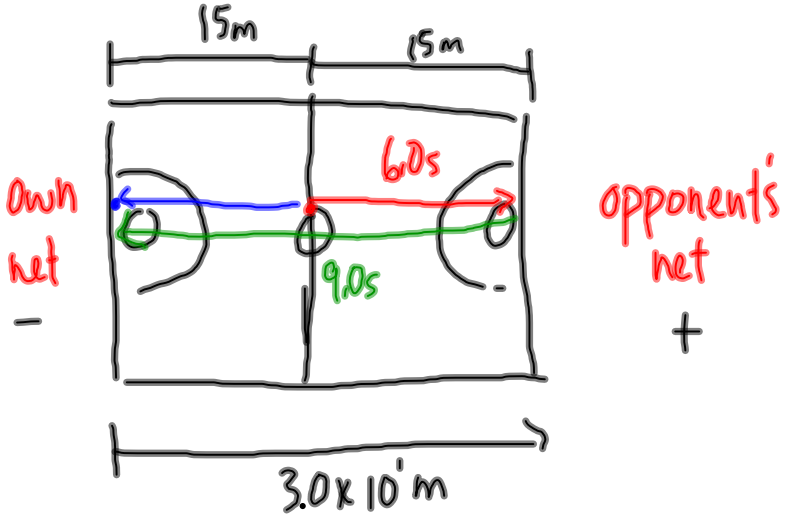
$\frac{47\text{m/s} + 30\text{m/s}}{2} = 38.5\text{m/s}$

IN GENERAL: No! No! No!

$V_{ave} \neq \frac{V_1 + V_2 + V_3 + \ldots\ldots + V_n}{n}$

$\vec{V}_{ave} = \frac{\text{displacement}}{\text{time}}$

mp|44



a) $\vec{\Delta d} = +15\text{m}$

$\Delta t = 6.0\text{s}$

$\vec{V}_{ave} = \frac{\vec{\Delta d}}{\Delta t}$

$\vec{V}_{ave} = \frac{+15\text{m}}{6.0\text{s}}$

$\vec{V}_{ave} = +2.5\text{ m/s}$

$\vec{V}_{ave} = 2.5\text{ m/s}$ [towards the opp net]

The average velocity of the BBall player is +2.5 m/s

b) $\vec{\Delta d} = -30\text{m}$

$\Delta t = 9.0\text{s}$

$\vec{V}_{ave} = \frac{\vec{\Delta d}}{\Delta t}$

$\vec{V}_{ave} = \frac{-30\text{m}}{9.0\text{s}}$

$\vec{V}_{ave} = -3.3\ \frac{\text{m}}{\text{s}}$

$\vec{V}_{ave} = 3.3\ \frac{\text{m}}{\text{s}}$ [toward own net]

The average velocity is ??

Rearranging $V = \frac{\Delta d}{\Delta t}$

Solve for Δd: $\Delta d = V\Delta t$

Solve for Δt:

$V = \frac{\Delta d}{\Delta t}$

$\frac{V\Delta t}{V} = \frac{\Delta d}{V}$

$\Delta t = \frac{\Delta d}{V}$

TO DO

1. PP | 45-46
2. Velocity Review 6-13