

# 12.4 CYU

#1) Magnitude = a numerical value that describes the amount of something (usually w) units)

#2) a) yes b) no c) no d) yes

#3) Distance is how far an object travels from a reference point, where as Position is the obj. location relative to a reference point

b) Displacement is the change in position of an obj.



#4) Cars speed = 60 km/h

velocity = 60 km/h west

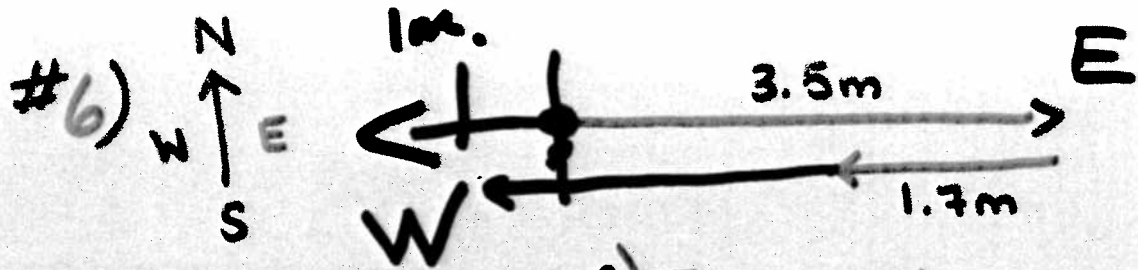
... answers will vary

#5) a)  $\Delta d = 100 + 100 = 200\text{m}$

$\Delta \vec{d} = 100 \sqrt{100^2 + 100^2} = 141\text{m [NE]}$



b)  $\Delta d = 400\text{m}$   $\Delta \vec{d} = 0\text{m}$



$$a) \vec{v}_{av} = \frac{\Delta d}{\Delta t} = \frac{3.5 + 1.7}{136 + 88} = \frac{5.2 \text{ m}}{224 \text{ s}}$$

$$= 0.023 \text{ m/s}$$

$$b) \vec{v}_{av} = \frac{\Delta \vec{d}}{\Delta t} = \frac{3.5 - 1.7}{224 \text{ s}}$$

$$= 0.008 \text{ m/s [E]}$$

#7) a) between 220s and 255s

b) " same as a "

c) at 110s and 190s

$$d) \vec{v}_{av} = \frac{240 \text{ m}}{70 \text{ s}} = 3.4 \text{ m/s [N]}$$

$$e) \vec{v}_{av} = \frac{920 \text{ m}}{255 \text{ s}} = \frac{920 \text{ m}}{255 \text{ s}} = 3.6 \text{ m/s}$$

f)  $\sim 5.5 \text{ m/s}$       g) yes @  $t = 155 \text{ s}$

$$h) \vec{v}_{av} = \frac{270 \text{ m}}{200 \text{ s}} = 1.4 \text{ m/s} \quad i) 0 \text{ m/s}$$