Ch13 Concept

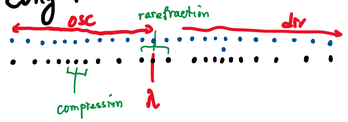
Thursday, 22 October 2020 18:06

Waves

- Transverse Wave

osc ⊥ wave dir

- Longitudinal Wave



osc // wave direction

Spring [OC]

$v = \sqrt{\frac{T}{\mu}}$

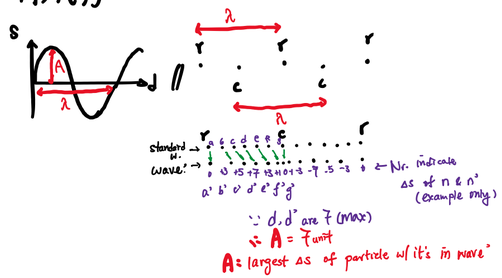
v = still velocity $[ms^{-1}]$

T = Tension* for here

μ = Mu/Mass per unit length

- Transerse wave @ Spring

A, λ, f



$$v = f\lambda$$

$[ms^{-1}] = [Hz] \cdot [m]$

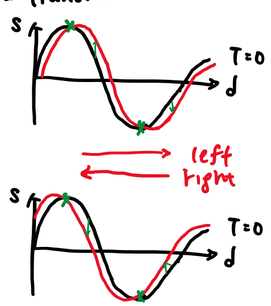
$(t^{-1}[S])$

T = time of a period (λ)

f = how much T per sec

Moving directions

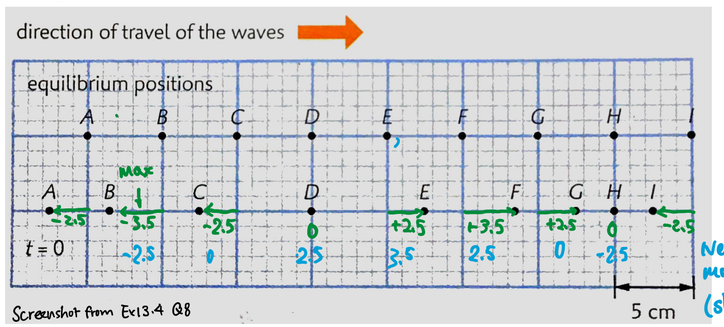
- Transverse



Crest, trough : Momentarily at Rest

Others : Refer L/R for up/down

- Longitudinal

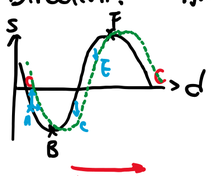


Screenshot from Ex13.4 Q8

∵ B, F max = 3.5u // 17.5cm

∴ A = 17.5cm

Direction!



Amplitude pt are Momentarily at rest

L/R?

2 proofs :

① Graph : Horizally of graph (s-d)

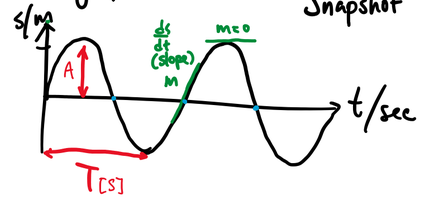
② Figures : Omit Amplitude pt (Rest)

. Original - Next = Pos → Same as direction

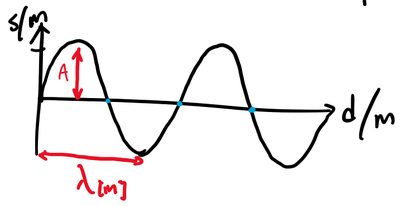
Neg → Inverse of direction

Graphs

s-t graph



A particle Snapshot



Multi Particle in Snapshot

m↑ → faster

m↓ → slower

m=0 → momentarily Rest

Equilibrium pt : the instant at Equil pos

Equil pt = Location of equil pos

Chickened

Lycohin ©

2020 Oct 22