

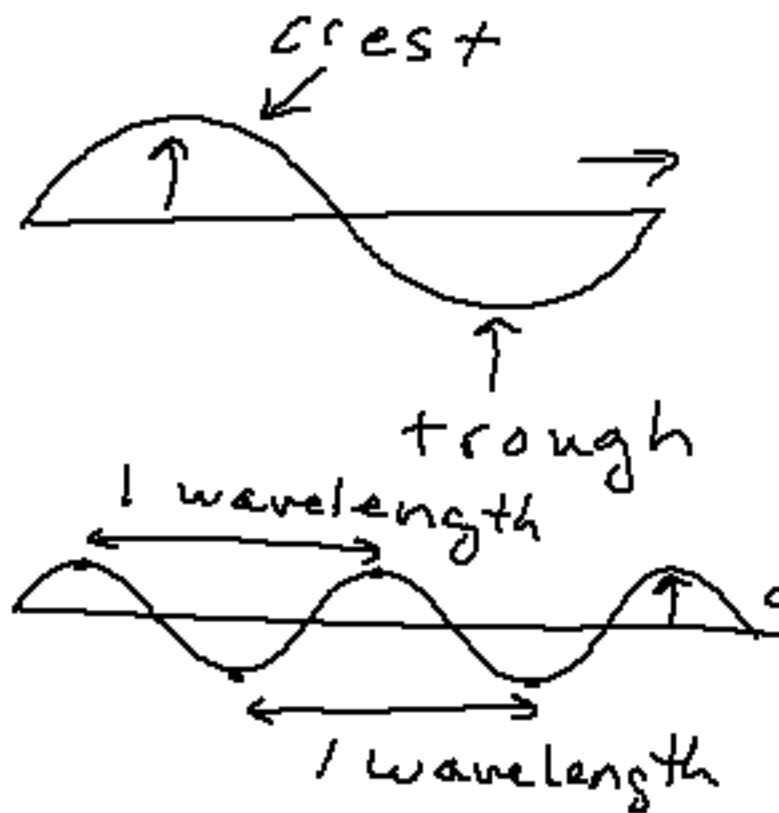
# Waves

transport energy, not matter.

pulse

periodic waves

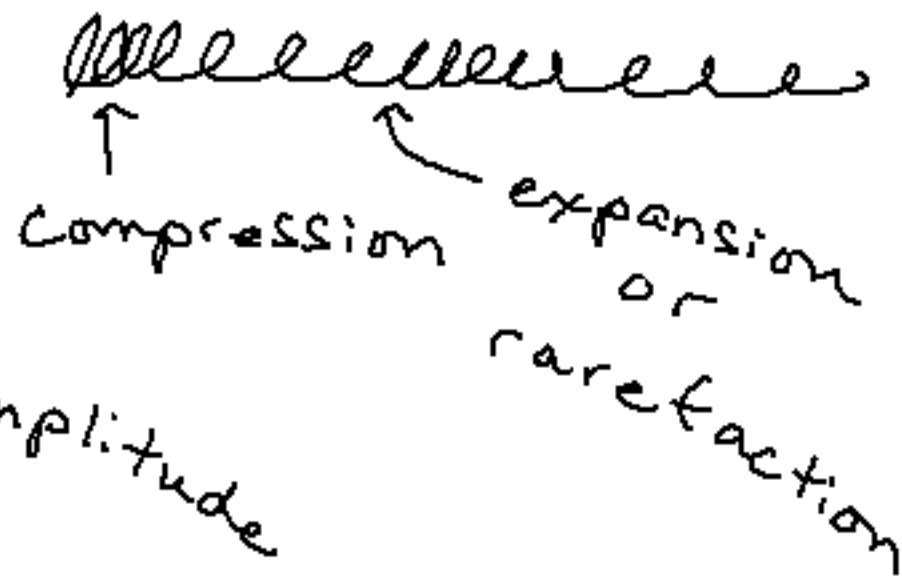
# transverse



ex: light waves

# longitudinal

p 303



ex: sound

water

mechanical

requires medium

Sound

electromagnetic

light

$\lambda$  lambda  
wavelength.

$$v = \lambda f$$

Sound waves travel at  $343 \text{ m/s}$   
and have a frequency of  $175 \text{ Hz}$ .  
Find wavelength.

$$343 = \lambda(175)$$

$$\lambda = 1.96 \text{ m}$$

P 304 ex 11-12

$$v = 1.40 \times 10^3$$

$$f = 200,000$$

$$1.40 \times 10^3 = \lambda (200,000)$$

$$\lambda = .007 \text{ m}$$

P 318 #36

$$\lambda = 6.5 \text{ m}$$

$$l = 3$$

$$f = \frac{1}{3} \text{ Hz}$$

$$v = 6.5 \left( \frac{1}{3} \right) = 2.17 \frac{\text{m}}{\text{s}}$$

p 318  
#37, 38