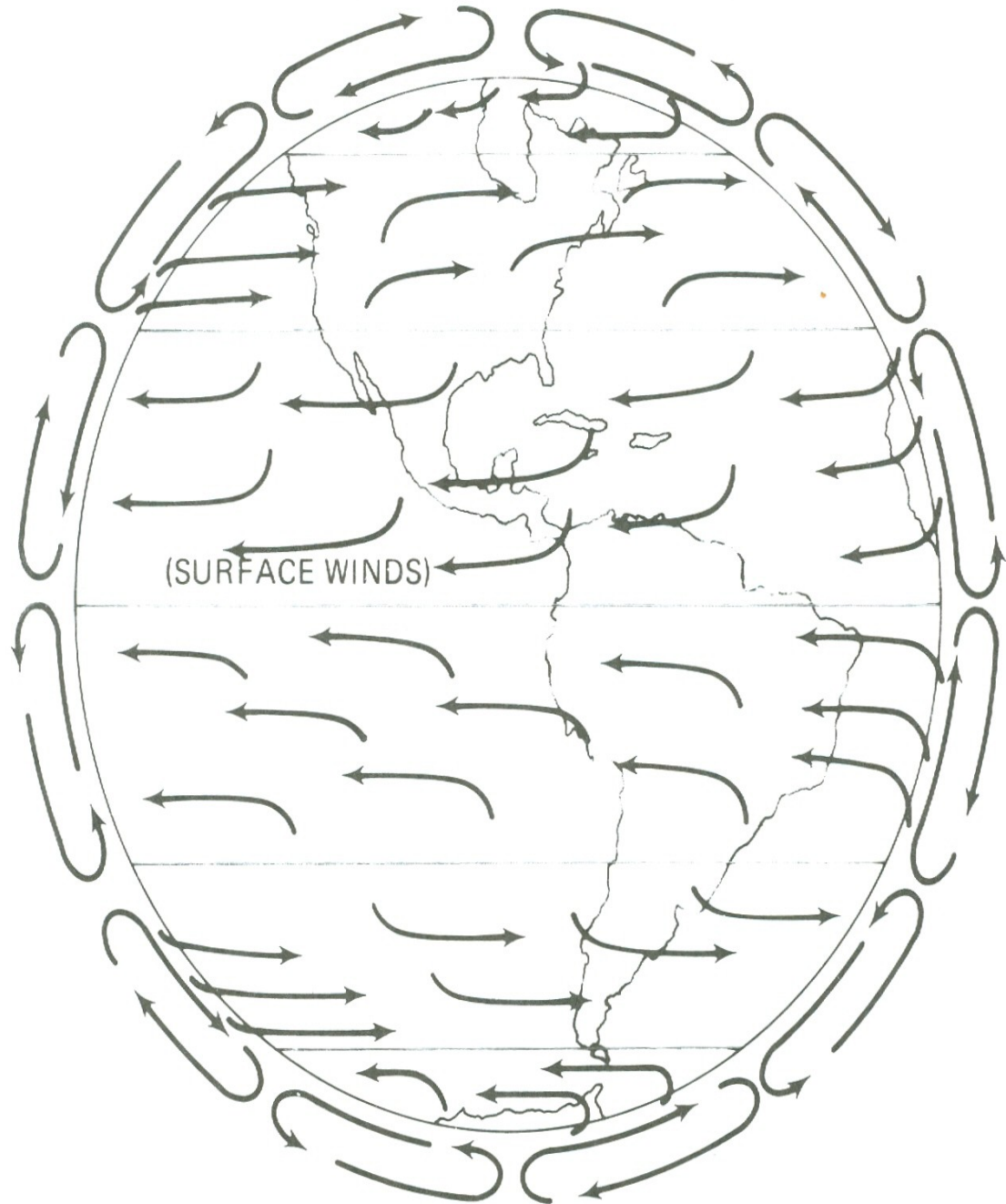
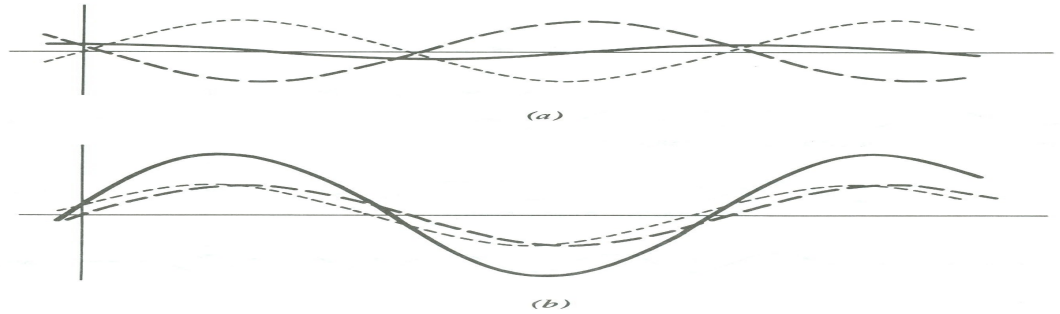


# Wind drives Waves

Determined by:

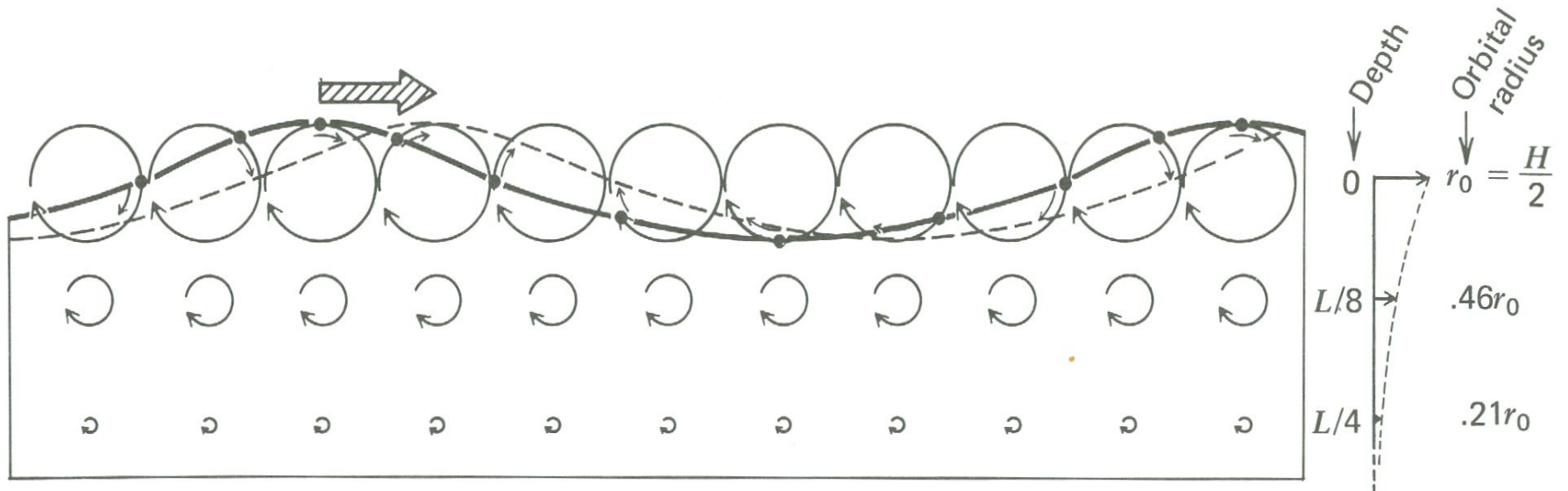
1. Velocity
2. Fetch
3. Duration [time]



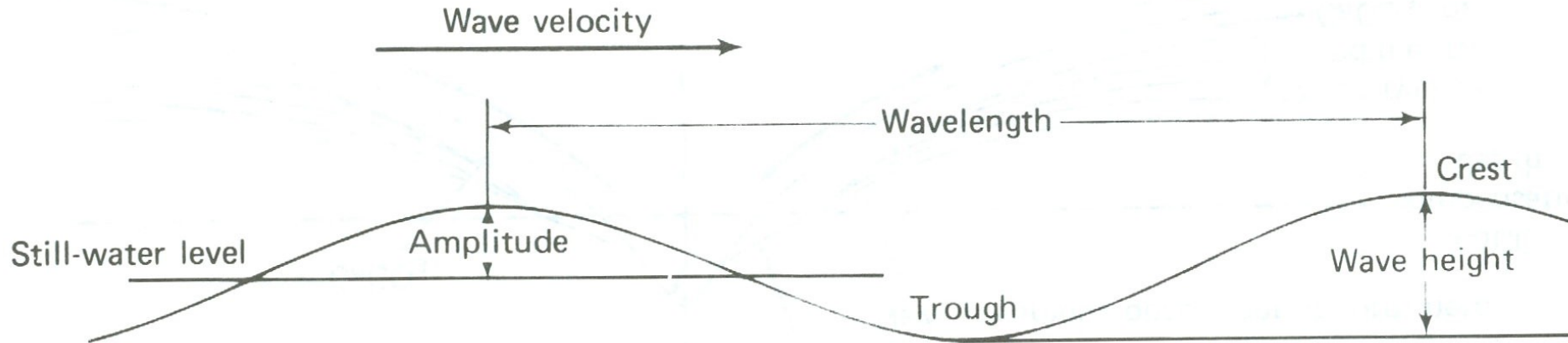


## Elliptical water wave

The wave moves with a given speed  
but the water does not.



# Diagram of a wave



L = Wavelength

H = Height

T = Period; time from crest to crest

Wave Velocity =  $.6 \times L \text{ ft} / T \text{ sec}$

example:

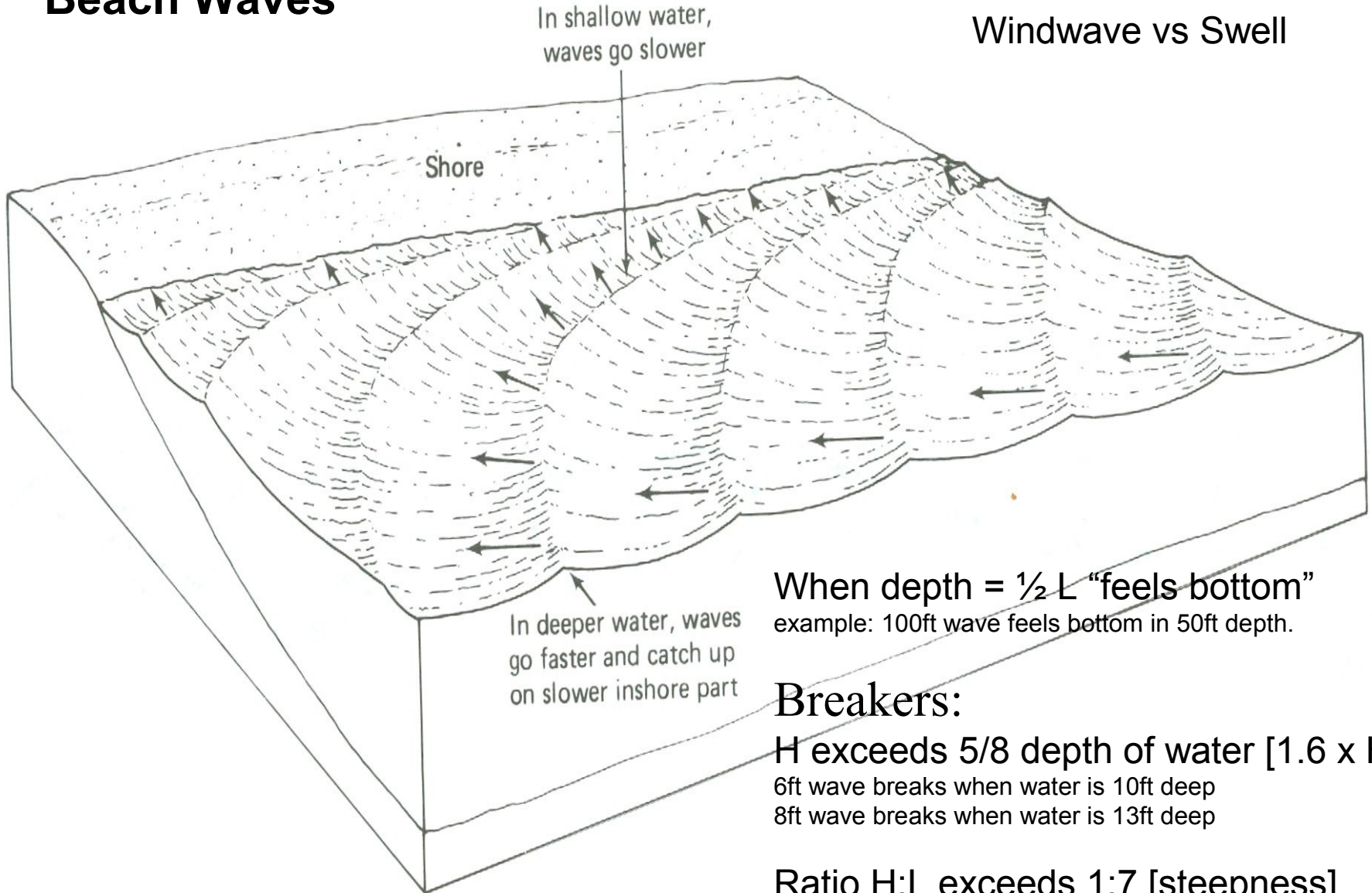
$.6 \times 100\text{ft} / 5\text{sec} = 12 \text{ kts}$

[.6 converts ft/sec into knots]

Wavelength =  $\text{Wave Velocity} \times T\text{sec} / .6$

# Beach Waves

Wave refraction  
Windwave vs Swell



When depth =  $\frac{1}{2} L$  "feels bottom"  
example: 100ft wave feels bottom in 50ft depth.

## Breakers:

H exceeds  $\frac{5}{8}$  depth of water [ $1.6 \times H$ ]  
6ft wave breaks when water is 10ft deep  
8ft wave breaks when water is 13ft deep

Ratio H:L exceeds 1:7 [steepness]  
If waves are 70ft apart; breaks if wave exceeds 10ft