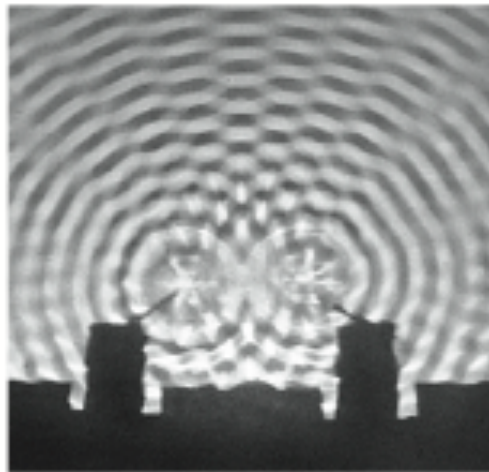




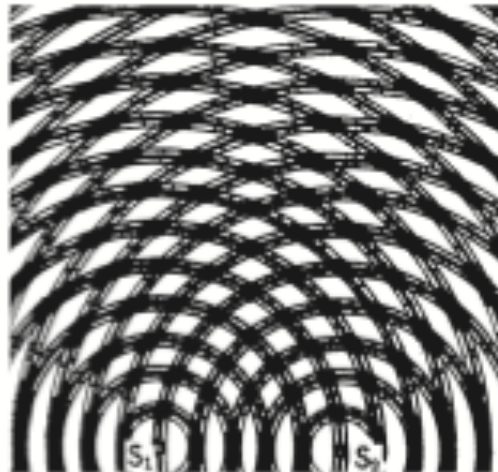
# Wave Interference

# Interference

- **Interference Pattern** – arrangement of places where wave effects are increased, decreased, or neutralized



**a**



**b**

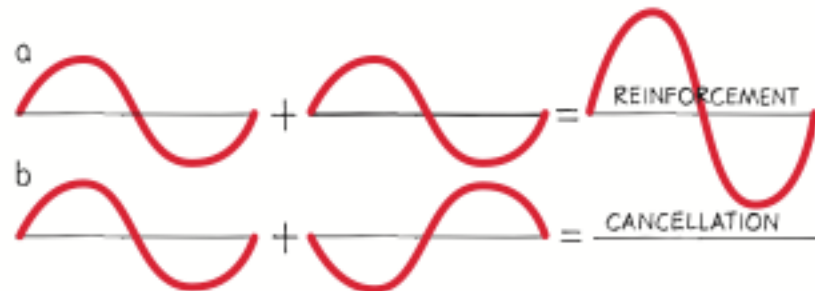
◀ **FIGURE 25.11**

**a.** Two overlapping water waves produce an interference pattern.

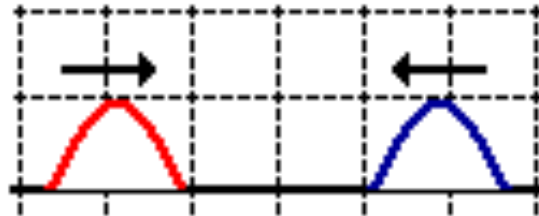
**b.** Overlapping concentric circles produce a pictorial representation of an interference pattern.

# Interference

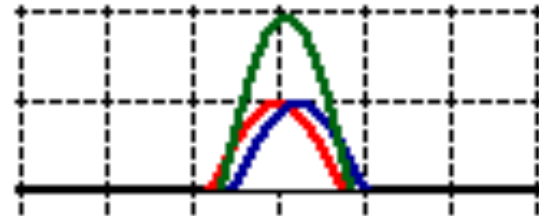
- **Constructive Interference** (reinforcement) – the crest of one wave overlaps the crest of another, their individual effects add together producing an increased amplitude
- **Destructive Interference** (cancellation) – the crest of one wave overlaps the trough of another, their individual effects are reduced



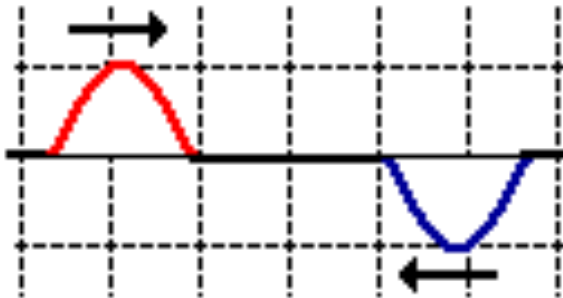
Before Interference



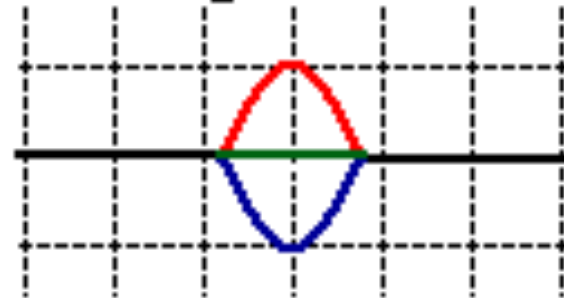
During Interference



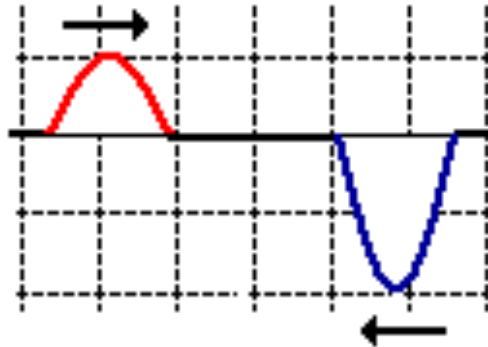
Before Interference



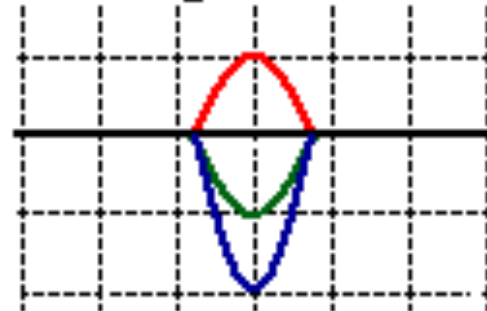
During Interference



Before Interference



During Interference



# Standing Waves

- **Standing Wave** – certain parts of the wave remain stationary, when the incident wave and reflected wave meet
- **Nodes** – part of the standing wave which does not move and has no amplitude (at equilibrium)
- **Antinodes** – position on a standing wave which has the largest amplitude

