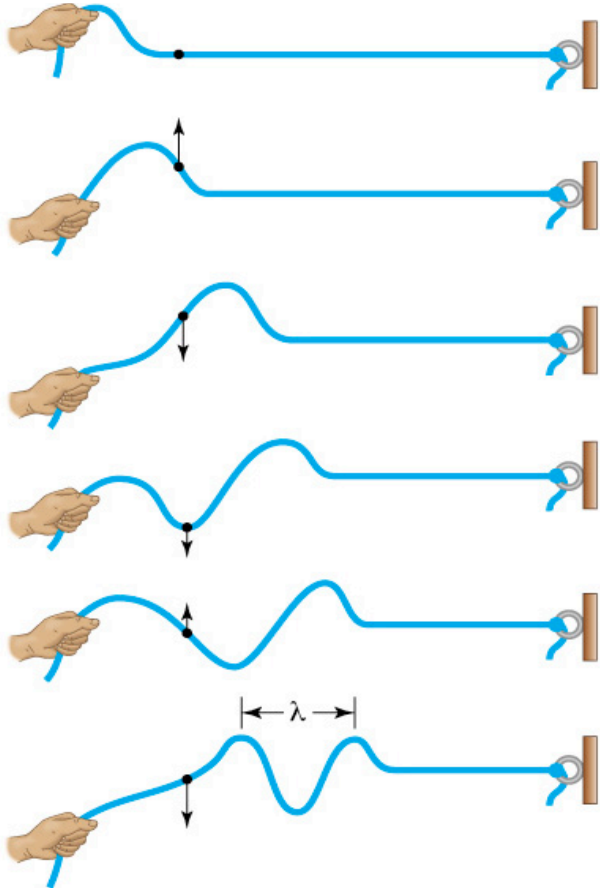


PHYS 3345: OPTICS



Quiz 01: Chapter 02 Spring 2008

Answer each of the questions below, showing your work.

A person generates a wave by shaking a string up and down, as shown in the figure. He shakes the rope up and down, completing a full cycle every 0.75 seconds.

1. (3 points) What is the **period** (τ) of the vibration?

$$\tau = 0.75\text{s}$$

2. (3 points) What is the **frequency** (ν) of the vibration?

$$\nu = \frac{1}{\tau} = \frac{1}{0.75\text{s}} = 1.3\text{Hz}$$

3. (4 points) The wavelength is measured to be **12cm**. What is the **wave speed** (v) in m/s?

$$v = \frac{\lambda}{\tau} = \frac{0.12\text{m}}{0.75\text{s}} = 0.16 \frac{\text{m}}{\text{s}}$$