

## Chapter 32 Transverse Waves (Examples) (S16)

**Example 1:** Ocean waves with a crest to crest distance of 11.5 m have a period of 7.58 seconds. What is the speed of the wave across the water's surface?

**Example 2:** When a wire vibrates at 60 hz, a transverse wave with a 40 cm wavelength travels along the wire. Calculate the wave number and the angular frequency.

**Example 3:** Find the wave function if the freq is 625 Hz, the amplitude is 1.24 m and the wave speed is 41.2 m/s and the wave is traveling in the negative x direction.

**Example 4:**  $y = 2 \sin(10x - 30t)$  (m, s): find  $w$ ,  $f$ ,  $T$ ,  $k$ ,  $l$ ,  $v$

**Example 5:** Transverse waves travel along a copper wire at 250 m/s. If the wire has a diameter of 1.25 mm, what is the tension in the wire? (the density of copper is  $8920 \text{ kg/m}^3$ )

**Example 6:** A string with a density of 12.6 gm/m hangs from the ceiling. If a 9.83 kg mass is attached to the lower end of the string, what is the wave speed on the string? (Ignore the mass of the string when determining the tension)