Question #60589, Physics / Other

The distance between two successive nodes in a vibrating string is 10cm. The frequency of the source is 30 Hz. What is the wavelength of the waves? What is the wave speed?

Solution

1) The wavelength:

$$L = \frac{\lambda}{2};$$

$$\lambda = 2L = 20 \text{ cm} = 0.2 \text{ m}$$

2) $f = \frac{v}{2L}$;

$$v = 2fL = 6 \text{ m/s}$$