Answer on Question #66911- Physics-Other

A sinusoidal wave is described by y(x,t) = 3.0 sin (3.52t - 2.01x) cm where x is the position along the wave propagation. Determine the amplitude wavenumber wavelength frequency and velocity of the wave

Solution

The amplitude is A=3.0 cm.

The wave number is $k = 2.01\ cm^{-1}$.

The frequency is

$$f = \frac{3.52}{2\pi} = 0.56\ Hz.$$

The velocity of the wave is

$$v = \frac{\omega}{k} = \frac{3.52}{2.01} = 1.75\frac{cm}{s}.$$