

A sinusoidal wave is described by

$$y(x, t) = 2.0 \sin(2.11x - 3.62t) \text{ cm}$$

where  $x$  is the position along the wave propagation. Determine the amplitude, wave number, wavelength, frequency and velocity of the wave.

Solution

the amplitude  $A = 2.0 \text{ cm}$

wave number  $k = 2.11 \frac{1}{\text{cm}}$

wavelength  $\lambda = \frac{2\pi}{k} = 2 * \frac{\pi}{2.11} = 2,99 \text{ cm}$

frequency  $f = \frac{\omega}{2\pi} = \frac{3.62}{2\pi} = 0.58 \text{ Hz}$

velocity of the wave  $v = \frac{\omega}{k} = \frac{3.62}{2.11} = 1,71 \frac{\text{cm}}{\text{s}}$