1. For the following wave expressions, indicate if the wave is standing or traveling. If the wave is traveling, find the direction of propagation and the velocity.

   a) \( \sin(500t + 0.3x) \)
   b) \( \cos(1.5 \times 10^5 t - 6 \times 10^{-1} z) \)
   c) \( \cos(120t) \sin(50x) \)

2. Find the phasor representation of the following expressions

   a) \( v(t) = 4 \cos \left( \omega t - \frac{2\pi}{3} \right) \)
   b) \( v(t) = 2.5 \sin \left( \omega t + \frac{\pi}{3} \right) \)
   c) \( v(t) = 8 \sin \left( \omega t + \frac{2\pi}{3} \right) + 8 \cos \left( \omega t - \frac{\pi}{3} \right) \)

3. Find the time domain expression for the following phasors.

   a) \( \vec{V} = 3.5 + j1.5V \)
   b) \( \vec{V} = 2.0e^{j\frac{\pi}{3}}V \)

4. A wave is described by \( \nu(t, z) = 3.5e^{-az} \sin \left( 2\pi \times 10^8 t - 12\pi z \right)V \). Find the frequency, wavelength and velocity. At \( z = 2m \) the magnitude is measured as 1V. Find the attenuation constant.