ECE 205 - WS7

Name: **UIN:**

1. Find the magnitude and phase of the following complex numbers.

   (a) $\mathbf{z} = \dfrac{\mathbf{1}}{\mathbf{1} + \mathbf{j}\omega}$, where ω is a real number.

   (b) $\mathbf{z} = \dfrac{\mathbf{-1}}{\mathbf{1} + \mathbf{j}\omega}$, where ω is a real number.

   (c) $\mathbf{z} = \dfrac{\mathbf{1}}{\mathbf{1} - \mathbf{j}\omega}$, where ω is a real number.

2. Given $\mathbf{v(t) = 5sin(5t) + 5\sqrt{2}sin(5t + 45^\circ)}$, express $\mathbf{v(t)}$ in the form $\mathbf{v(t) = V_m sin(\omega t + \theta)}$.