

EE 3340

**Homework Problem #003**

(a) Given  $\mathbf{x} = 3.9e^{j4.2}$  and  $\mathbf{y} = 0.63e^{-j1.8}$ , determine  $\Re\{\mathbf{x} \times \mathbf{y}^*\}$  and  $\Im\{\mathbf{x} \times \mathbf{y}^*\}$ . (The angles are in radians.)

(b) Express the complex number  $\mathbf{z} = \frac{3 + j2}{2 - j3} + 3e^{-j50^\circ}$  in exponential form, with the angle in degrees.