

## PROBLEM:

Simplify the following complex-valued expressions. Reduce the answers to a simple numerical form.

(a) For  $W = -4 + j3$ , express the conjugate  $W^*$  in polar form. In addition, plot  $W^*$  as a vector.

(b) For  $U = (-2 + j2)e^{-j\pi/4}$ , express  $U$  in rectangular form. In addition, plot  $U$  as a vector.

(c) For  $V = -4 + j3$ , express the inverse  $V^{-1}$  in rectangular form. In addition, plot  $V^{-1}$  as a vector.

(d) For  $Z = -1 + j$ , express  $\Re\{Ze^{j3t}\}$  as a sinusoid in the standard “cosine” form.