

## PROBLEM:

Simplify the following complex-valued expressions. In each case reduce the answers to a **simple** numerical form. Let

$$V = -3 + j3\sqrt{3}.$$

- (a) Express  $jV$  in polar form. In addition plot  $jV$  as a vector.
- (b) Express the inverse of  $V$  in rectangular form. In addition plot  $\frac{1}{V}$  as a vector.
- (c) If  $Z = \frac{|V|}{V^*}$ , express  $Z$  in polar form. In addition plot  $Z$  as a vector.
- (d) Express  $\Re\{j^3 V e^{j15t}\}$  in the standard “cosine” form.