PROBLEM:

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

$$V = -\frac{1}{\sqrt{3}} + j.$$

(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 $\Re e\{j^3 V e^{j15t}\}$ in the standard "cosine" form.