

## PROBLEM:

Some miscellaneous complex number problems:

(a) Evaluate the complex number  $z = \frac{j^{-1} - j^{-2}}{j^{-3} + j^{-4}}$ .

(b) The following set defines a curve in the complex plane (i.e., the 2-D plane):  $\{z : |z - j| = 2\}$ . Draw a sketch of this curve.

(c) The following set defines a curve in the complex plane (i.e., the 2-D plane):  $\{z : \Im\{z\} = \pi\}$ . Draw a sketch of this curve.