Coverage: Complex Numbers and Phasors

Instructions

- Complete each of the problems from Appendix A two ways:
  1. by hand, i.e. with a calculator, to calculate cosine and sine from Euler's identity. Remember to use radian mode on your calculator.
  2. with a MATLAB script to numerically calculate the values as a check on your hand calculations. Include a copy of the MATLAB script and the command line results.
- Helpful MATLAB commands for complex numbers include `abs`, `angle`, `real`, `imag`, and `exp`. Use `doc` or `helpwin` for details/manual information.
- Use the `zprint` function from the SPFirst Toolbox to report complex numbers in a variety of formats all at once.
- Any problems given in a "P-A.n" format are end-of-chapter problems from DSPFirst Appendix A.

Problems

(1) P-A.1

(2) P-A.2

(3) P-A.3(a),(b),(c)

(4) P-A.6

(5) P-2.4

(6) P-2.8

(7) P-2.9

(8) Prove that: $ae^{jb} \neq a + jb$,

In general for arbitrary values of a and b.