

**Homework Set 4****EECS 206****Due: Fri., Feb. 8, 2002**

Relevant lectures: 1/28, 1/30, 2/1.

Relevant reading: Chapter 3: 3.1 to 3.4 (including 3.4.5 handout)

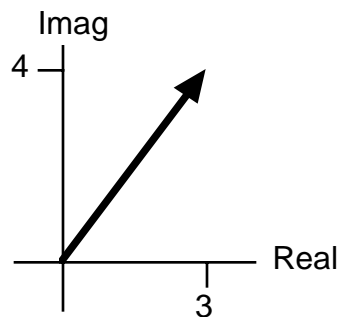
Relevant items in the DSP First CD: Homework Problems given last week plus 3.7 – 3.23

Homework submission policies: Same as before; see course web site.

1. 2.13a, p. 45

2. 2.14, p. 45

3. Find the sinusoidal signal for which the phasor is given by the following diagram:



4. 3.3, p. 78

5. 3.5, p. 79

6. 3.6, p. 79

7. Calculate the Fourier coefficients  $C_k$  of the exponential Fourier series representation of the periodic "sawtooth" signal of fundamental period  $T_0$ , described over one period by:

$$x(t) = t, 0 \leq t < T_0$$

8. Calculate the Fourier coefficients  $C_k$  of the exponential Fourier series representation of the periodic "full-wave rectified sine" signal

$$x(t) = |\sin(t)|, t \in \Re$$