1) Simpson P50, problem 32.

2) This is a review problem on complex numbers. Manipulating complex numbers will become important when we discuss AC circuits.
   Let: \( A = 2 + 4j \)
   \( B = -1 + 3j \)
   \( C = 3 - 2j \)
   Find the magnitude and phase of:
   a) \( A, B, \) and \( C \)
   b) \( (A + C)/B \)
   c) \( (2A - 3B^*)/(A - C^*), \) * = complex conjugate

3) A current of 1 mA charges a 1 \( \mu \)F capacitor. How long does it take the cap. to reach 10 Volts?

4) Simpson P103, problem 2. Also calculate \( V_{RMS} \) for the following waveforms:

![Square Wave](image)

![Triangle Wave](image)

8) Simpson P105, problem 15. The rise time is defined on page 107 of Simpson.

Physics 617:
1) Draw the Thevenin equivalent circuit for the following two circuits:
   (note: the load resistor has already been taken out of the circuit, if it were in the circuit, it would be across the \( V_{out} \) terminals).

![Circuit 1](image)

![Circuit 2](image)

2) Simpson P105, problem 23.