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 V?

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

![Square wave](image1.png)

![Triangle wave](image2.png)


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

9) 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](image3.png)

![Circuit 2](image4.png)

10) Simpson P105, problem 23.