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Circuit and System Analysis

Exercise for Week-4

1. The input to the circuit shown in Figure 1 is the current

$$i_s(t) = 80\cos(250t)mA.$$

The steady-state mesh current in the right mesh is

$$i_2 = 66.56\cos(250t + 33.7^\circ)mA.$$

Determine the value of the resistance R.

2. For the circuit of Figure 2, find the value of C required so that $Z = 590\Omega$ when $f = 1$ MHz ($1MHz = 10^6Hz$).

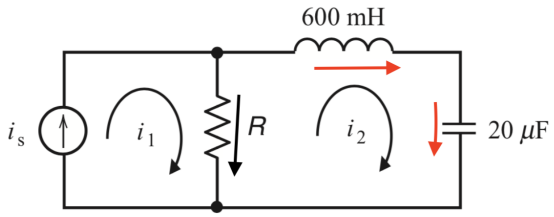

Figure 1

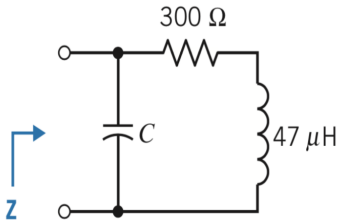

Figure 2