Problem 1

![Circuit Diagram 1]

a) Find $I_0$

b) Find $V_0$

Problem 2

![Circuit Diagram 2]
Problem 3

\[ V_s(t) = 15 \sin (2500t) \]

Find \( V_o(t) \) and \( V_o \)

- Function of Time
- Phasor

Problem 4

\[ R=1\,\text{k}\Omega \]
\[ C=0.1\,\mu\text{F} \]
\[ V_{in} = 1 \sin(\omega t) \]

Find \( V_o \) for Frequencies 1 Hz, 10 Hz, 100 Hz, 1000 Hz, 10,000 Hz, 100,000 Hz. Remember that \( \omega = 2\pi f \)