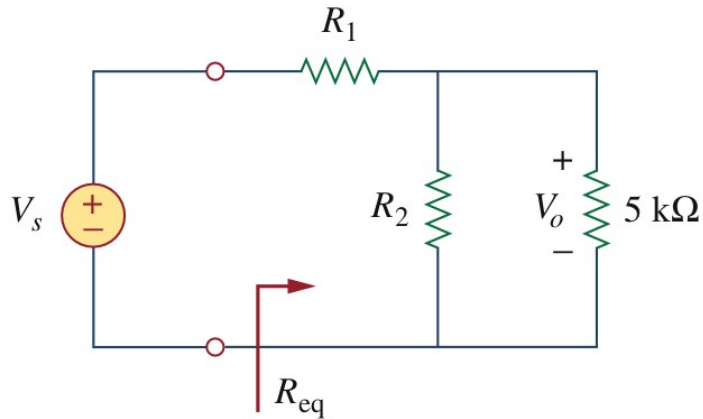| 1	2	3	4	5	Total
/20	/20	/20	/20	/20	/100

DO NOT BEGIN THE EXAM UNTIL YOU ARE TOLD TO DO SO.

PROBLEM ONE: (20 points)

In a certain application, the circuit in the figure below must be designed to meet these two criteria:

(a) $V_o / V_s = 0.05$ (b) $R_{eq} = 40 \text{ k}\Omega$

If the load resistor 5 kΩ is fixed, find R_1 and R_2 to meet the criteria.

PROBLEM TWO:

A load is connected to a network. At the terminals to which the load is connected, $R_{Th} = 10 \ \Omega$ and $V_{Th} = 40$ V. Find the maximum possible power supplied to the load.
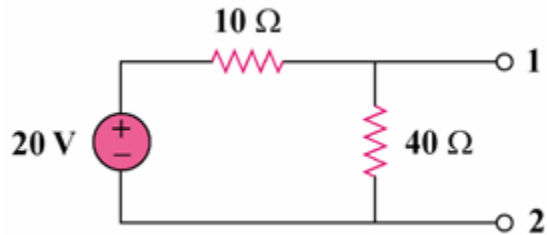
Professor Peter Burke

PROBLEM THREE:

The equivalent capacitance at terminals *a-b* in the circuit in the figure below is 20 μF. Calculate the value of *C*.
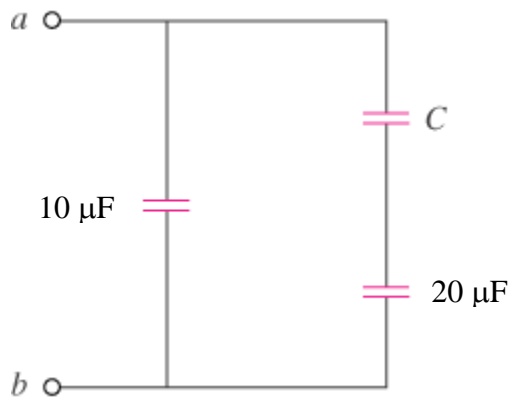
PROBLEM FOUR:

Determine R_{Th} and V_{Th} at terminals 1-2 of the circuits shown below.

PROBLEM FIVE:

Obtain v_o for the op amp circuit shown below.