

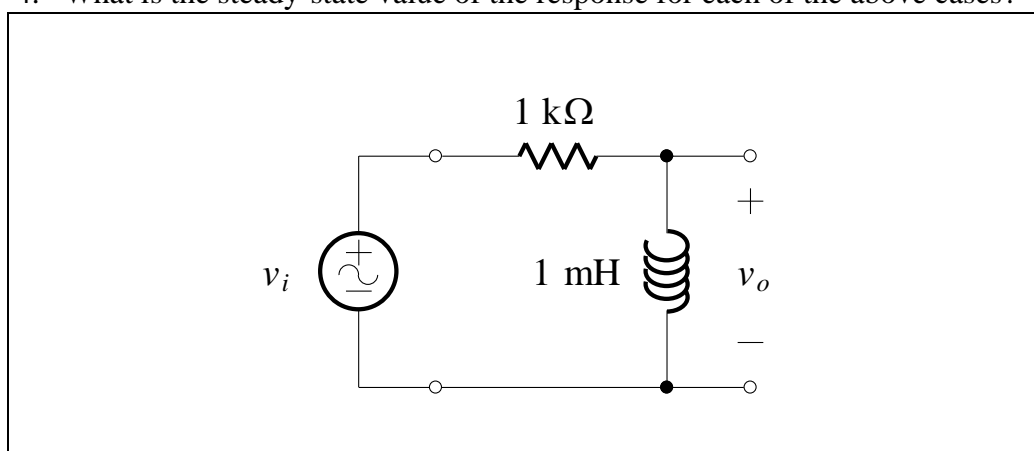
Name:

Student Number:

Revision

For the following circuit:

1. Determine the transfer function of the circuit.
2. Determine the impulse response of the circuit.
3. Derive the time-domain response of $v_o(t)$ for the cases:
 - (a) $v_i(t) = u(t)$
 - (b) $v_i(t) = \cos(1000t)u(t)$
4. What is the steady-state value of the response for each of the above cases?



Answer:

A thinking problem...

It takes 20 minutes to fill a bath using only the hot tap. It takes 10 minutes to fill a bath using only the cold tap. How long does it take to fill the bath when both taps are turned on?