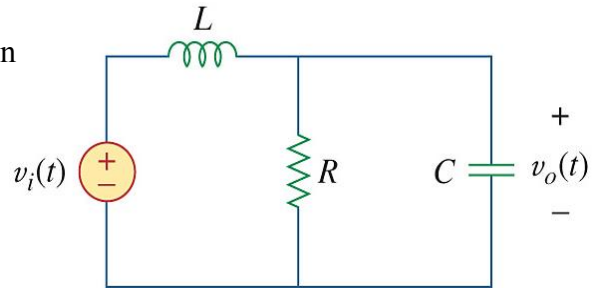
P1 **Concept:** Deriving transfer function H(ω) and its use in SSS analysis

Find: a) H(ω) of the circuit if L = 2H, R = 20Ω, and C = 0.1F and
b) find $v_0(t)$ if $v_i(t) = \cos(2t)$

Hints:
- There are 5's in the num and den
- H(ω) is a function of ω, not s!
- The phase angle of v_0 is "nice"



P2 **Concept:** Deriving transfer function H(ω) and its use in SSS analysis

Find: a) H(ω) of the circuit. Write as a simple polynomial ratio.
b) tell if it is a lowpass (passes low frequencies, blocks high ones) or highpass filter (passes high freqs, blocks low ones).

Hints:
- Try substituting ω = 0 and ∞ to see if the filter is a low or highpass.
- The numerator is jRLω, where R is either R_1 or R_2.