Phasors 007

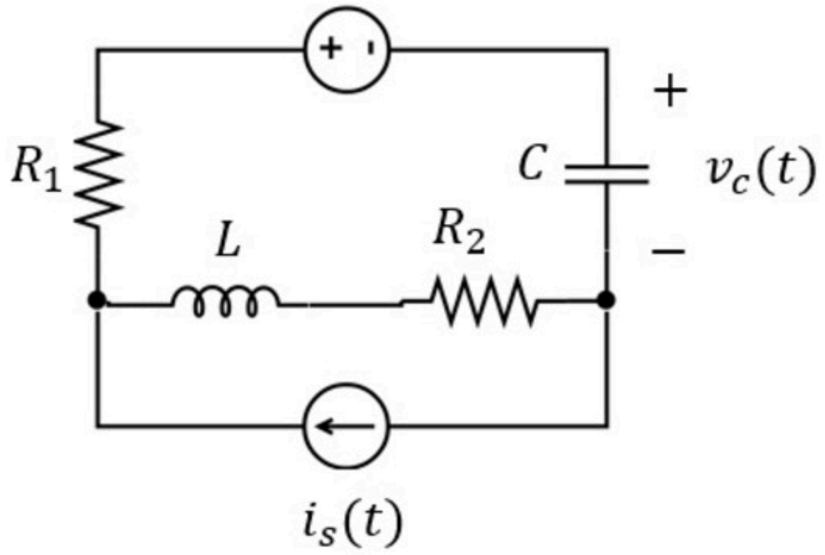
Problem has been graded.

$$v_s(t) = A_1\sqrt{2} \cdot \cos(W_1 t + B_1)$$

$$i_s(t) = 2 \cdot \cos(W_1 t - 90°) \quad \text{A}$$

Find steady state voltage

$$v_c(t) = A_2\sqrt{2} \cdot \cos(W_2 t + B_2) \quad \text{with } -180° < B_2 \leq 180°$$



Given Variables:

A1 : 14 V

B1 : -45 degrees

W1 : 2000 (1/s)

C : 125 uF

L : 2 mH

R1 : 4 ohm

R2 : 4 ohm

Calculate the following:

A2 (V) :

3 ✓

B2 (degrees) :

45 ✓

W2 (1/s) :

2000 ✓

> Hint: We do not need to use superposition, but we could if we wanted to.