11–34 The circuit in Figure P11–34 is in the steady state with $v_1(t) = 5 \cos 1414.21t$ V. Find $v_{2SS}(t)$. Repeat for $v_1(t) = 5 \cos 1\ kt$ V. And without doing any calculations, repeat for $v_1(t) = 5$ V.

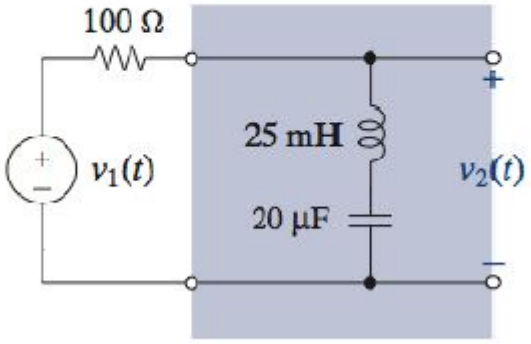

FIGURE P11–34

Resultat:

$v_{2SS}(t) = 8.91 \cos(1414.21t - 90°)\ \mu$V og $v_{2SS}(t) = 1.2127 \cos(1000t - 76°)$ V

og

$v_{2SS}(t) = 5$ V

11–37 The circuit in Figure P11–37 is in the steady state with $i_1(t) = 10 \cos 50kt$ mA, $R_1 = 100\ \Omega$, $R_2 = 400\ \Omega$, and $L = 100$ mH. Find $i_{2SS}(t)$. Repeat for $i_1(t) = 10 \cos 5kt$ mA. Where is the pole located?

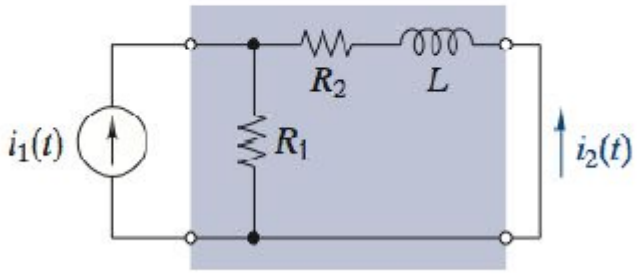

FIGURE P11–37

Resultat:

$i_{2SS}(t) = 199 \cos(50000t + 95.7°)\ \mu$A og $i_{2SS}(t) = 1.414 \cos(5000t + 135°)$ mA

The pole is located at $s = -5000$ rad/s.

D Design Exercise 11–23

Design an *RC* circuit to realize the following transfer function

$$T(s) = \frac{200}{s + 1000}$$

Skaler så: $C_1 = 0{,}5\ \mu F$

Resultat: $R = 2500\ \Omega$, & $C_2 = 2\ \mu F$
Hvor udgangsspændingen er over C_2

11–70 D Design a *passive* circuit to realize the transfer function below using only resistors, capacitors, and inductors. Scale the circuit so that all inductors are 50 mH or less.

$$T_V(s) = \frac{s^2}{(s + 2000)^2}$$

Resultat:

Et kredsløb bestående af en modstand, en kondensator og en spole i serie, hvor man tager udgangsspændingen over spolen.

$R = 200\ \Omega$ $C = 5\mu F$ $L = 50$ mH