AC power 008

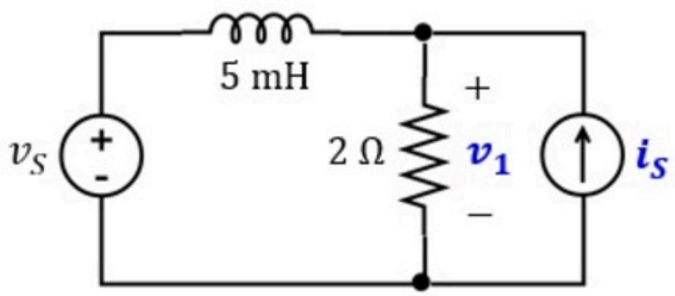
Problem has been graded.

Both v_S and i_S are AC sources with $\omega = 400$ rad/s. Someone did two measurements on the circuit and found:

$$v_1(t) = A_1 \cos(400t + B_1) \qquad \textit{(this is } v_1\textit{, not } v_S \textit{ !)}$$

$$i_S(t) = 2\cos\left(400t + \frac{\pi}{6}\right)$$

(a) Find the average power P_1 received by the resistor
(b) Find the average power P_2 supplied by current source i_S
(c) Find the average power P_3 received by the inductor



Given Variables:

A1 : 8 V

B1 : 90 degrees

Calculate the following:

P1 (W) :

16 ✓

P2 (W) :

4 ✓

P3 (W) :

0 ✓

Hint: Find S symbolically first. Find phasors and plug in. For c, what do you know about the element?