

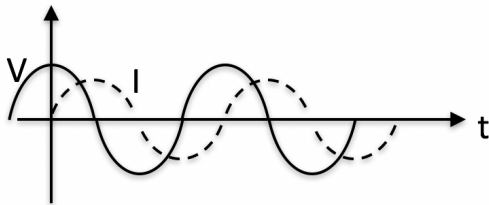
What is $\text{Re} \left[\frac{e^{j\omega t}}{1+i} \right]$?

- A. $\frac{1}{\sqrt{2}} \cos(\omega t + \pi/4)$
- B. $\frac{1}{\sqrt{2}} \cos(\omega t - \pi/4)$
- C. $\frac{1}{2} \cos(\omega t + \pi/4)$
- D. $\frac{1}{2} \cos(\omega t - \pi/4)$
- E. Something else

ANNOUNCEMENTS

- Quiz 3 (next Friday 2/17) - RLC circuits
 - Solve a circuit problem using the phasor method
 - Discuss limits on the response and how it might act as a filter

AC voltage V and current I vs time t are as shown:



The graph shows that..

- A. I leads V (I peaks before V peaks)
- B. I lags V (I peaks after V peaks)
- C. Neither

Suppose you have a circuit driven by a voltage:

$$V(t) = V_0 \cos(\omega t)$$

You observe the resulting current is:

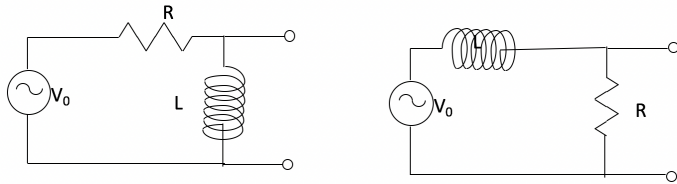
$$I(t) = I_0 \cos(\omega t - \pi/4)$$

Would you say the current is

- A. leading
- B. lagging

the voltage by 45 degrees?

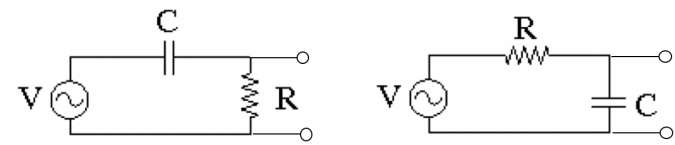
Two LR circuits driven by an AC power supply are shown below.



Which circuit is a low pass filter?

- A. The left circuit
- B. The right circuit
- C. Both circuits
- D. Neither circuit

Two RC circuits driven by an AC power supply are shown below.



Which circuit is a high pass filter?

- A. The left circuit
- B. The right circuit
- C. Both circuits
- D. Neither circuit