

# Phasors 018

0 of 5 attempts made

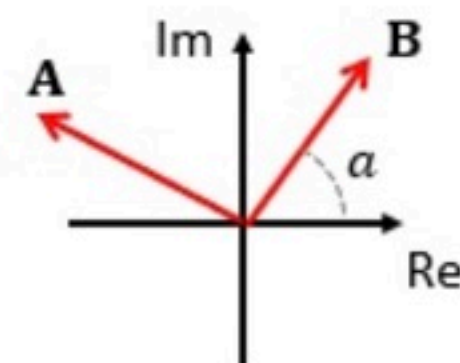
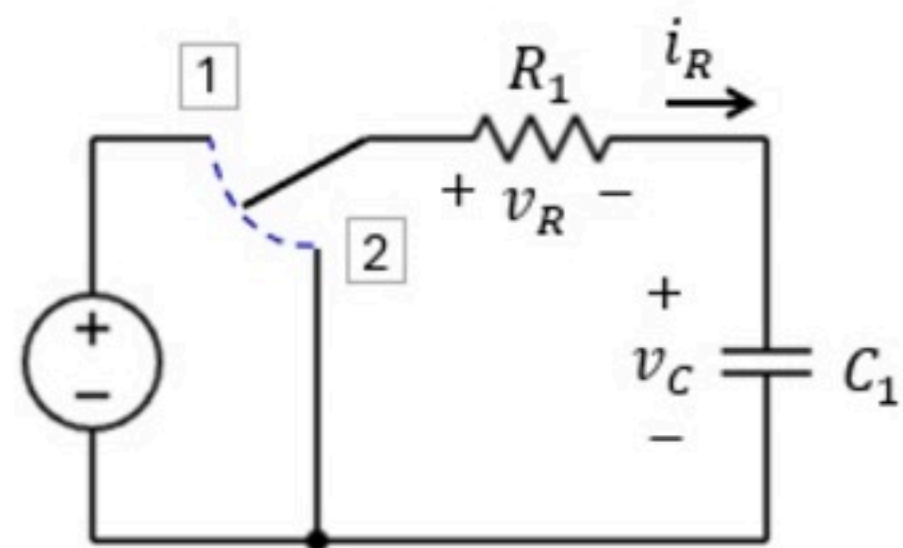
In the circuit below, the switch moves from position 1 to position 2 at time  $t = 0$ . For  $t < 0$  (switch in position 1), you may assume that the system is in steady state. The voltage source is sinusoidal with  $\omega = W_1$ .

The diagram shows two phasors, **A** and **B**. (Note that the phasors are not drawn to scale. Also, we show three diagrams to illustrate the situation depending on the value of  $a$  you were given. You need to select the diagram that corresponds to your given value.) In your diagram, one phasor represents the capacitor voltage  $v_C$  and the other the resistor voltage  $v_R$  (but you are not told which one is which).

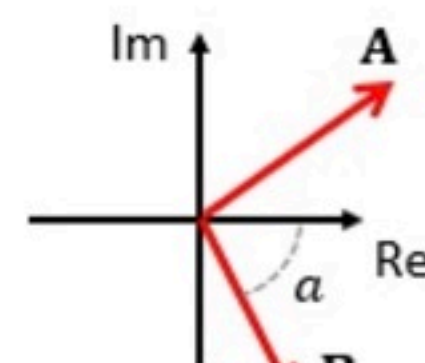
a. Find  $i_1 = i_R(0^-)$  (i.e., just before the switch moves to position 2).

b. Find  $i_2 = i_R(0^+)$  (i.e., just after the switch moves to position 2).

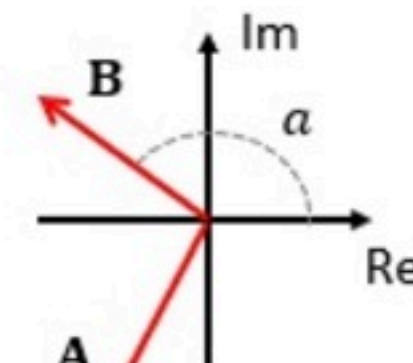
$$|A| = X\sqrt{2}$$



If  $0 < a < \pi/2$



If  $-\pi/2 < a < 0$



If  $\pi/2 < a < \pi$

Given Variables:

W1 : 1 rad/s

X : 25

a : -45 degrees

R1 : 5 ohm

C1 : 1 F

Calculate the following:

i1 (A) :

5



i2 (A) :

-1

