

Date:     /     /

ID	Comp	Name

## 1. Objectives

1. Solve the circuit shown for  $R=1k\Omega$  rated  $\frac{1}{2}W$ ,  $C=10nF$ , and  $V_S$  is a sine wave with peak voltage 10V and  $f=1kHz$ . Build the circuit to solve for the RMS current drawn from the source.
2. What is the phase shift (delay) between  $V_C$  and  $V_S$
3. If the source frequency is increased, what is the peak voltage of  $V_C$

Equation (1):  $delay = \frac{phase}{360 \times f}$

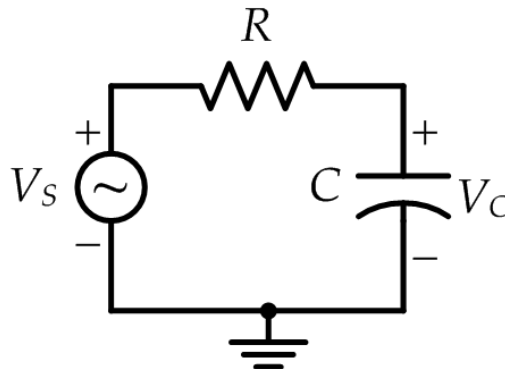
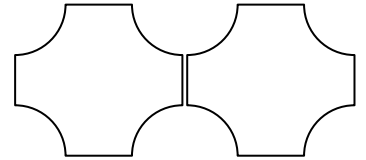


Figure (1): AC Circuit

## 2. Equipment

- |   |       |
|---|-------|
| <input type="checkbox"/> DC Supply          | Qty = |
| <input type="checkbox"/> Function Generator | Qty = |
| <input type="checkbox"/> Digital Multimeter | Qty = |
| <input type="checkbox"/> Oscilloscope       | Qty = |
| <input type="checkbox"/> Other:             |       |



### 3. Experiment Steps

Experiment (1.1):

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Experiment (1.2):

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Experiment (1.3):

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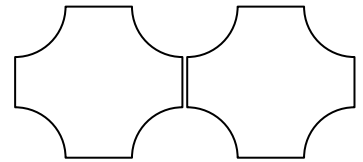
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#### 4. Results

##### Experiment (1.1)

	$V_{S\,RMS}$	$I_{S\,RMS}$
Theoretical		
Experimental		
Error %		

##### Experiment (1.2)

	$V_S - V_C$ delay
Theoretical	
Experimental	
Error %	

##### Experiment (1.3)

	$peak\ V_C$			
	$f=1kHz$	$f=5kHz$	$f=10kHz$	$f=100kHz$
Theoretical				
Experimental				
Error %				

#### 5. Remarks

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