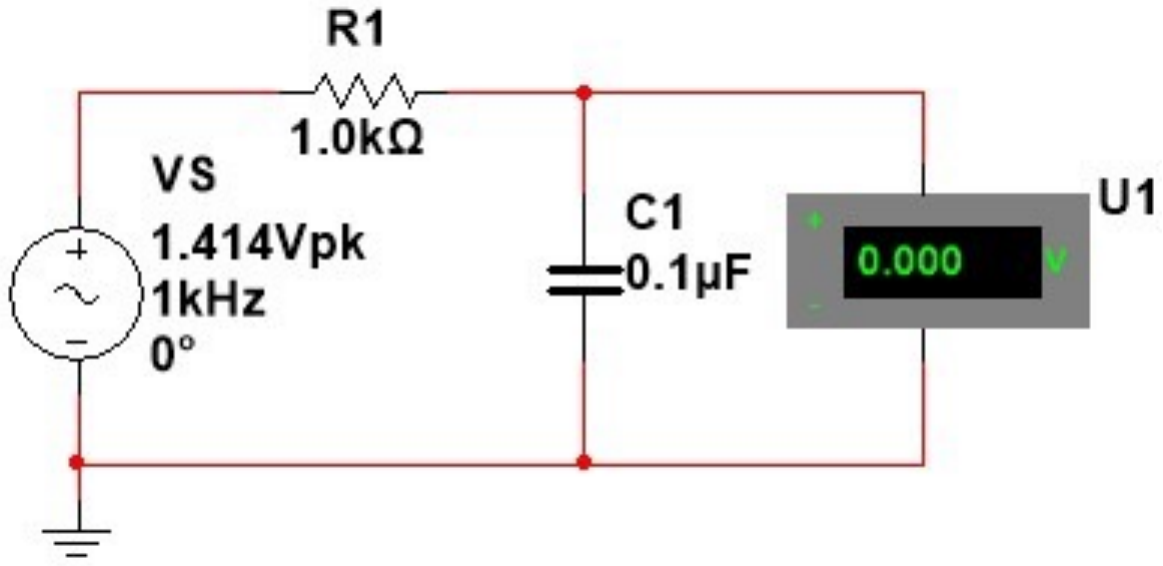
Engaged Learning Practice

#2

Practice #1: A Series RC Circuit

Name at least three reasons the voltmeter in the Figure might indicate 0 V.

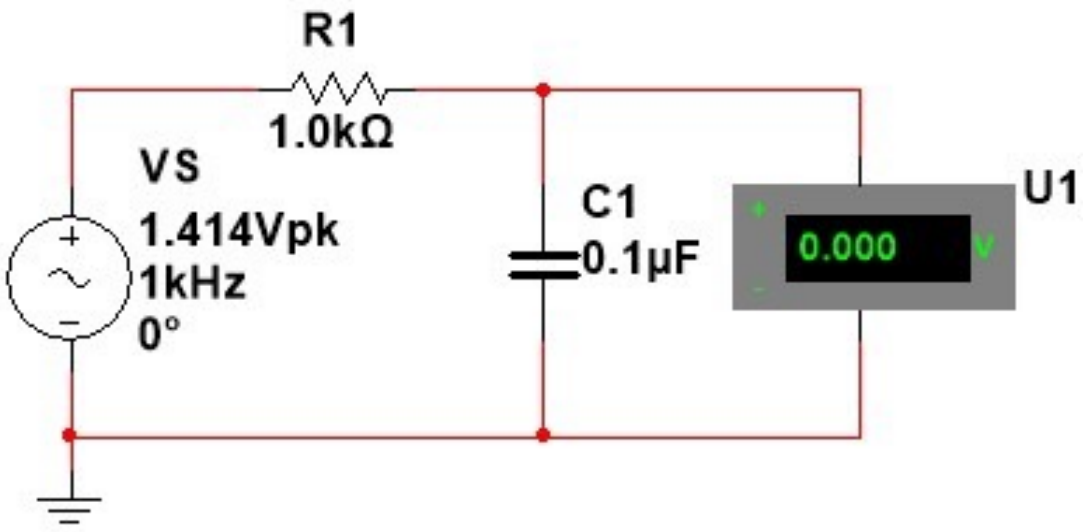


Description of Figure 1:

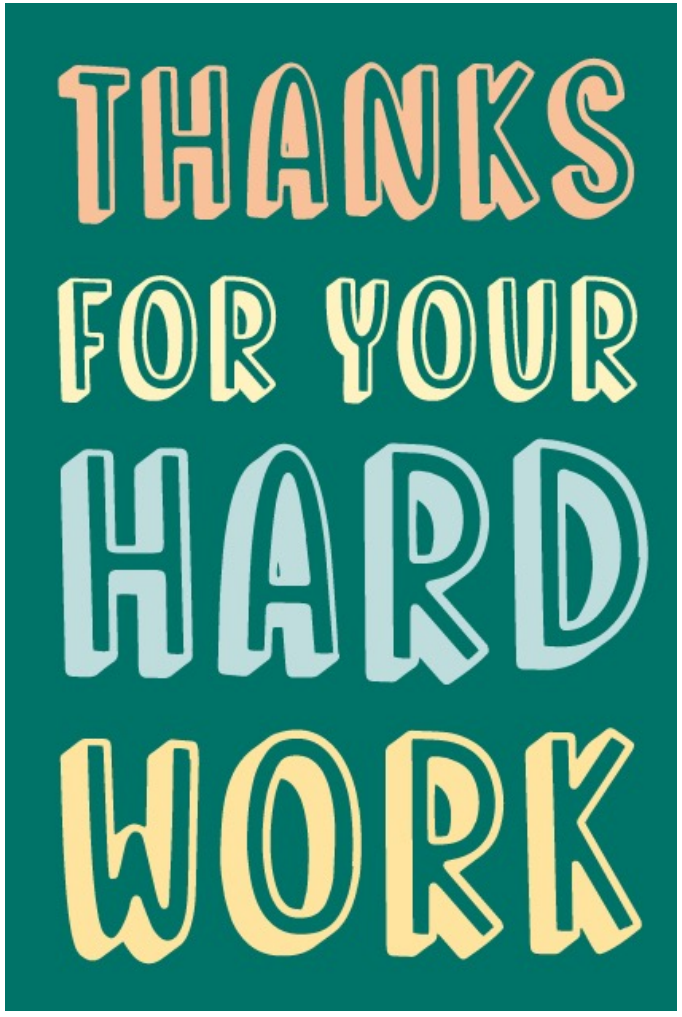
- A 1.414 V peak, 1 kHz AC voltage source, V_S, with a phase of 0 degrees connects to a series RC circuit consisting of a 1.0 k Ω resistor, R_1, and a 0.1 μF capacitor, C_1.
- A voltmeter, U1, connected across C_1, reads 0.000 V.
- Ground ground is designated as the connection between V_S and C_1.

Solution to Practice #1: Capacitive Reactance

Name at least three reasons the voltmeter in the Figure might indicate 0 V.



1. Source turned off, disconnected, or much higher frequency than expected.
2. R1 open or path through R1 open.
3. C1 shorted
4. Open ground path
5. Incorrect meter setting (for example, dc instead of ac)



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