

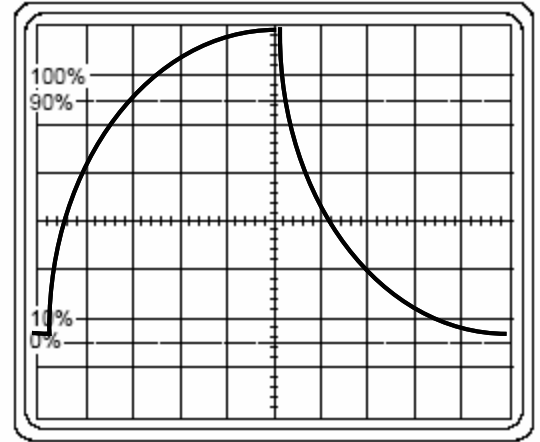
Name: \_\_\_\_\_ Lab Section: \_\_\_\_\_ Date: \_\_\_\_\_

## PreLab: RC Circuits

**Instructions:** Prepare for this lab activity by answering the questions below. Note that this is a **PreLab**. It must be turned in at the start of the lab period. Time cannot be given in lab to perform PreLab activities. After the start of lab activities, PreLabs cannot be accepted. Explain your answers. Points will be taken off if your work is not neat and well organized.

1. (3 points) What quantities can be measured by an oscilloscope?

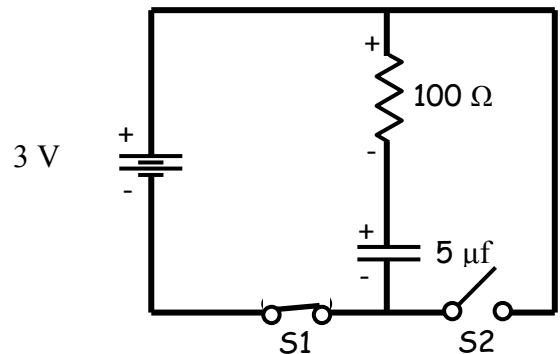
2. (6 points) You have constructed an RC circuit and you see the trace to the right on your oscilloscope screen. You have set the vertical scale to 1 volt per square and the horizontal to 10 ms per square. What is the time constant of the RC circuit? (Show your work.)



3. (6 points.) You have constructed an RC circuit to the right. (Explain your answers.)

a. You then change the resistance to  $300 \Omega$ . How does the time constant change?

b. You then change the capacitance to  $20 \mu\text{f}$ . How does the time constant change?



c. You then change to a 6 volt battery. How does the time constant change?