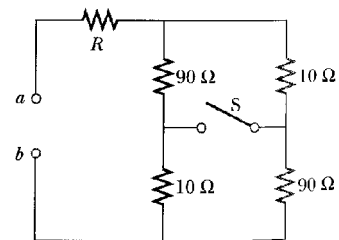
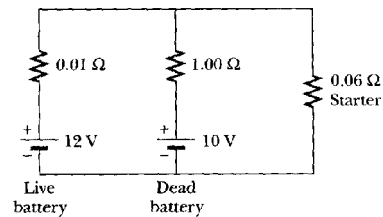


- [Serway Chapter 28 Problem 6, pg 821]  
A typical fresh AA dry cell has an emf of 1.50 V and an internal resistance of  $0.311 \Omega$ .  
(a) Find the terminal voltage of the battery when it supplies 58 mA to a circuit. (b) What is the resistance  $R$  of the external circuit?
- [Serway Chapter 28 Problem 12, pg 821]  
(a) You need a  $45\text{-}\Omega$  resistor, but the stockroom has only  $20\text{-}\Omega$  and  $50\text{-}\Omega$  resistors. How can the desired resistance be achieved under the circumstances?  
(b) What can you do if you need a  $35\text{-}\Omega$  resistor?

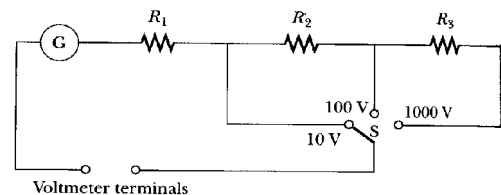
- [Serway Chapter 28 Problem 22, pg 822]  
The resistance between points  $a$  and  $b$  in the figure drops to  $\frac{1}{2}$  its original value when  $S$  is closed. Determine the value of  $R$ .



- [Serway Chapter 28 Problem 29, pg 823]  
A dead battery is charged by connecting it to the live battery of another car as shown. Determine the current in the starter and the dead battery.



- [Serway Chapter 28 Problem 54, pg 826]  
For each voltage setting, a galvanometer having an internal resistance of  $100 \Omega$  deflects full scale when the current is 1.0 mA. For the multiscale voltmeter in the figure, what are the values of  $R_1$ ,  $R_2$  and  $R_3$ ?



- [Serway Chapter 28 Problem 67, pg 827]  
An 8-foot extension cord has two 18-gauge copper wires, each having a diameter of 1.024 mm. How much power does this cord dissipate when carrying a current of (a) 1.0 A and (b) 10.0 A?