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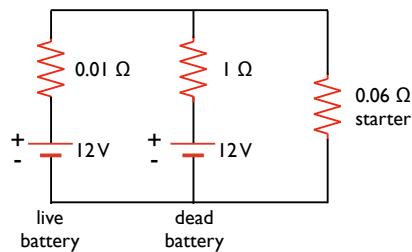
UNIVERSITY OF ALABAMA  
Department of Physics and Astronomy

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## Circuits Exercises

1. Are the two headlights of a car wired in series or in parallel? How can you tell?
2. What advantage might there be in using two identical resistors in parallel connected in series with another identical parallel pair, rather than just using a single resistor?
3. A dead battery is charged by connecting it to the live battery of another car with jumper cables (see below). Determine the current in the starter and in the dead battery.



4. Two resistors connected in series have an equivalent resistance of  $690\ \Omega$ . When they are connected in parallel, their equivalent resistance is  $150\ \Omega$ . Find the resistance of each resistor.