Name _____
Regents Physics

Series Circuit HW Problem

A circuit contains the following connected in series:

- A 120 V battery
- 100 Ω resistor
- A variable resistor
- A switch
- A 25 Ω lamp (lightbulb in other words)

Step 1:

- Draw the circuit using the symbols from your reference tables.
- Show a voltmeter measuring the potential difference (voltage) across the lamp
- Show an ammeter measuring the current in the circuit

Step 2:

- Determine to what resistance the variable resistor needs to be set to have a current of 0.4 A. Show all work below for credit.

Step 3:

Determine the potential difference (voltage drop) across (show all work below)

- The lamp 100 Ω resistor

- The 25 Ω lamp

- The variable resistor