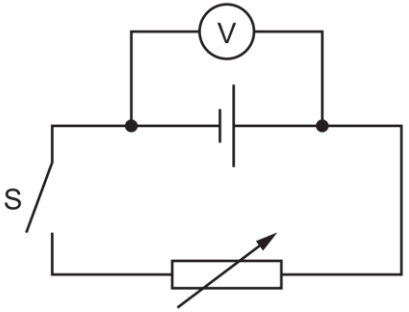
22 A cell that has internal resistance is connected to a switch S and a variable resistor. A voltmeter is connected between the terminals of the cell, as shown.



When switch S is open, the variable resistor is adjusted to have a value of 8.0 Ω, the voltmeter reads 1.5 V.

The switch is then closed and the variable resistor is adjusted to have a resistance of 4.0 Ω. The voltmeter now reads 0.75 V.

What is the internal resistance of the cell?

A 1.0Ω **B** 2.0Ω **C** 4.0Ω **D** 8.0Ω