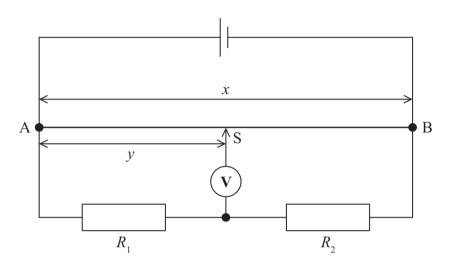
A current-carrying wire AB of length x and uniform diameter is connected in a circuit as shown.



The slider S is moved along the wire until the reading on the voltmeter is 0 V.

Which of the following equations is correct?

$$\mathbf{B} \quad \frac{y}{x - y} = \frac{R_1}{R_2}$$

$$\square$$
  $C$   $\frac{x}{y} = \frac{R_1}{R_2}$ 

$$\square \quad \mathbf{D} \quad \frac{x}{y} = \frac{R_1}{R_1 + R_2}$$