

Answer on Question #46639, Physics, Other

A battery of emf E and negligible internal resistance is connected to two resistances R_1 and R_2 in series. What the potential difference across R_2 ?

$E(R_1+R_2)/R_2$

$E(R_1+R_2)/R_1$

ER_2/R_1+R_2

ER_1/R_1+R_2

Solution

According to Ohm's law for a complete circuit, the current in the circuit is equal to $I = \frac{E}{R_1 + R_2}$,

so the potential difference across R_2 is $V_2 = R_2 I$ and we get the **answer:** $V_2 = \frac{ER_2}{R_1 + R_2}$.