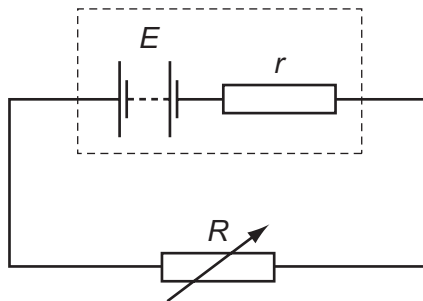


- 36** A battery with e.m.f.  $E$  and internal resistance  $r$  is connected in series with a variable external resistor.



The value of the external resistance  $R$  is slowly increased from zero.

Which statement is correct? (Ignore any temperature effects.)

- A** The potential difference across the external resistance decreases.
- B** The potential difference across the internal resistance increases.
- C** The power dissipated in  $r$  increases and then decreases.
- D** The power dissipated in  $R$  increases and then decreases.

- 37** A battery of electromotive force (e.m.f.)  $6.0\text{ V}$  and negligible internal resistance is connected in