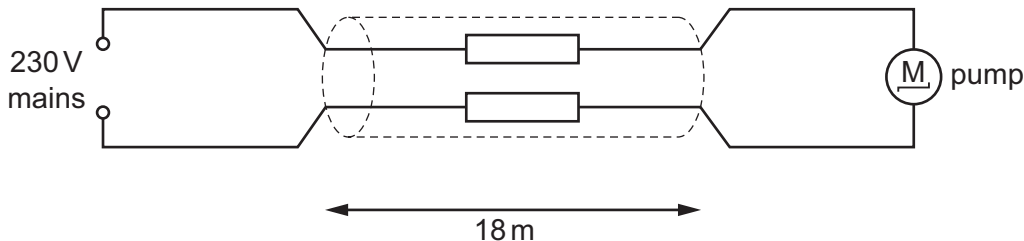


- 32 The diagram shows an electric pump for a garden fountain connected by an 18 m cable to a 230 V mains electrical supply.



The performance of the pump is acceptable if the potential difference (p.d.) across it is at least 218 V. The current through it is then 0.83 A.

What is the maximum resistance per metre of each of the two wires in the cable if the pump is to perform acceptably?

- A** $0.40 \Omega \text{ m}^{-1}$ **B** $0.80 \Omega \text{ m}^{-1}$ **C** $1.3 \Omega \text{ m}^{-1}$ **D** $1.4 \Omega \text{ m}^{-1}$

- 33 Cell X has an e.m.f. of 2.0 V and an internal resistance of 2.0Ω . Cell Y has an e.m.f. of 1.6 V and