

- 6 An electric heater consists of three similar heating elements A, B and C, connected as shown in Fig. 6.1.

For
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Use

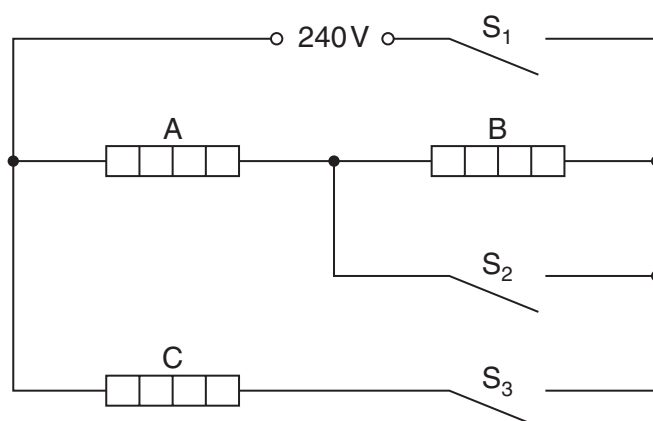


Fig. 6.1

Each heating element is rated as 1.5kW, 240V and may be assumed to have constant resistance.

The circuit is connected to a 240V supply.

- (a)** Calculate the resistance of one heating element.

resistance = Ω [2]

- (b) The switches S_1 , S_2 and S_3 may be either open or closed.

Complete Fig. 6.2 to show the total power dissipation of the heater for the switches in the positions indicated.

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S_1	S_2	S_3	total power / kW
open	closed	closed
closed	closed	open
closed	closed	closed
closed	open	open
closed	open	closed

[5]

Fig. 6.2