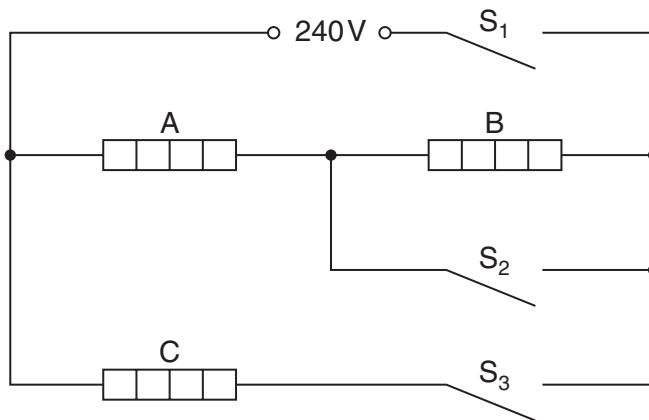


- 6 An electric heater consists of three similar heating elements A, B and C, connected as shown in Fig. 6.1.



**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.

$$\text{resistance} = \dots \Omega [2]$$

- (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.

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

[5]

**Fig. 6.2**