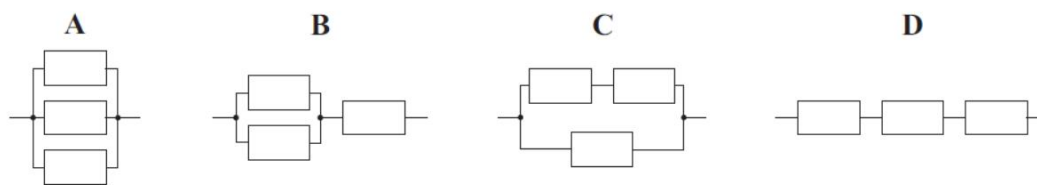




Electricity

2003

- 8 Three resistors of equal value are connected up as shown.



Arrange the letters corresponding to the four combinations in increasing order of resistance (least resistance first).

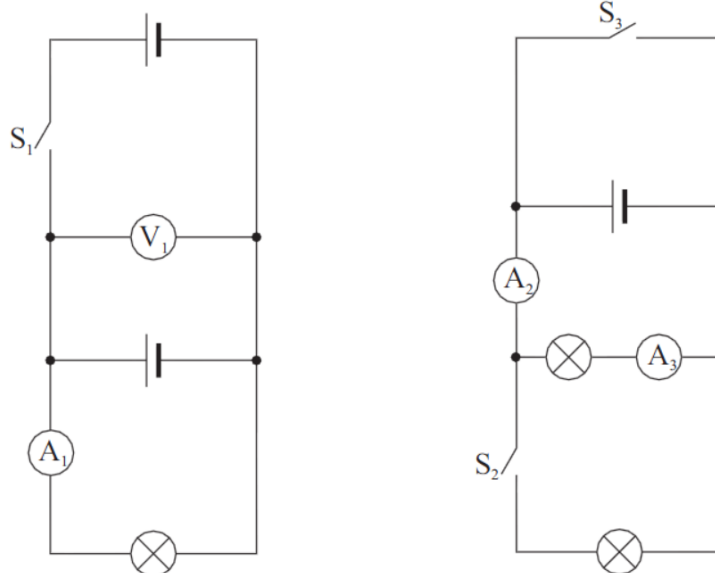
- 17 Which **one** of the following is **not** equal to volts?

- A $\frac{\text{joules}}{\text{coulombs}}$
- B amperes \times ohms
- C $\frac{\text{watts}}{\text{amperes}}$
- D $\sqrt{\text{watts} \times \text{ohms}}$
- E $\sqrt{\frac{\text{watts}}{\text{coulombs}}}$



2004

- 15 In these circuits the cells are identical and their internal resistances can be ignored.



Indicate whether each of the statements below is **true** or **false** for the circuits shown.

- i) When switch S_1 is closed, the reading on voltmeter V_1 will increase.
- ii) When switch S_1 is closed, the reading on ammeter A_1 will increase.
- iii) When switch S_2 is closed, the reading on ammeter A_2 will increase.
- iv) When switch S_2 is closed, the reading on ammeter A_3 will decrease.
- v) When switch S_3 is closed, the reading on ammeter A_2 will increase.



Electricity

- 20 Which **one** of the following is **not** a measure of electrical power?
(V = potential difference, I = current, Q = charge, t = time, R = resistance)

A $\frac{QV}{t}$

B I^2R

C $\frac{Q^2R}{t}$

D VI

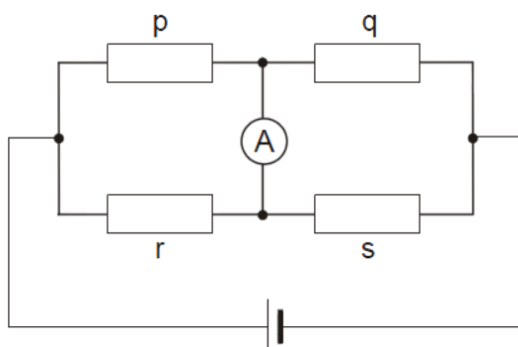
E $\frac{V^2}{R}$



Electricity

2005

- 4 Four $1000\ \Omega$ resistors are connected as shown in the following circuit.



Two of the resistors are changed to $900\ \Omega$.

Changing which pair of resistors would make a current flow in the ammeter?

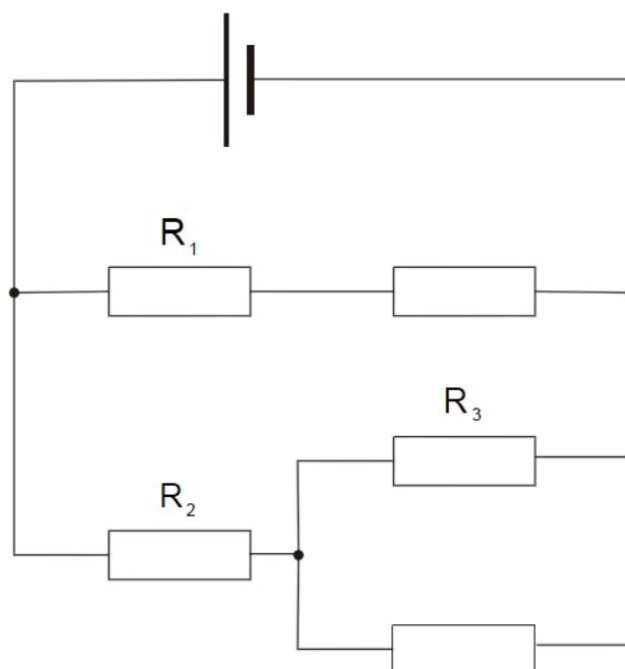
- A p and q
- B p and r
- C r and q
- D r and s



Electricity

2006

20 Five identical resistors are connected to a cell as in the diagram.



The potential differences across R_1 , R_2 and R_3 are V_1 , V_2 and V_3 respectively.

What is the order of increasing potential differences (smallest first)?

- A V_1, V_2, V_3
- B V_1, V_3, V_2
- C V_2, V_1, V_3
- D V_2, V_3, V_1
- E V_3, V_1, V_2
- F V_3, V_2, V_1



Electricity

2007

- 7 A 100 % efficient transformer has 1500 turns on its primary coil. The input to the transformer is 250 V ac. The output current is 10 A and the output power is 0.5 kW.

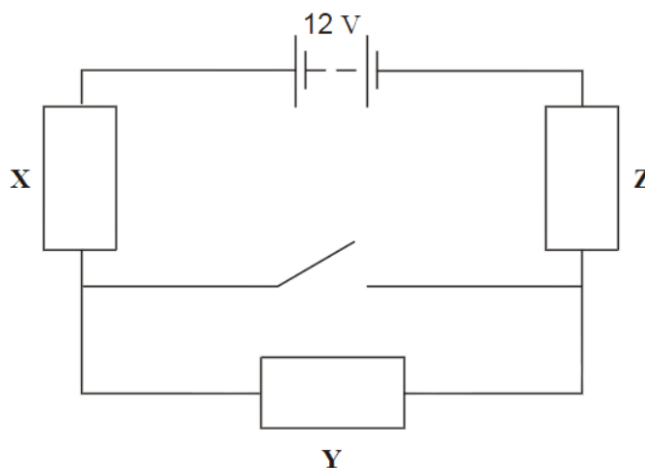
What is the number of turns on the secondary coil?



Electricity

2008

20 The diagram below shows three identical resistors and a battery that supplies a constant 12 V.



With the switch open, as shown, the current in resistor Y is 20 mA.

When the switch is closed, what is the current in resistor X, and what is the potential difference (voltage) across resistor Z?

	Current in X (mA)	Potential difference across Z (V)
A	$13\frac{1}{3}$	4
B	$13\frac{1}{3}$	6
C	20	4
D	20	6
E	30	4
F	30	6