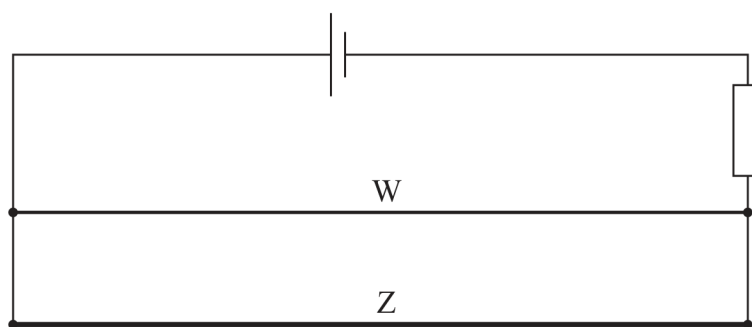13 Equal lengths of two copper wires, W and Z, are connected in parallel in a circuit as shown.

Wire Z has twice the diameter of wire W.

(a) Explain why the drift velocity of the charge carriers is the same value in wires W and Z.
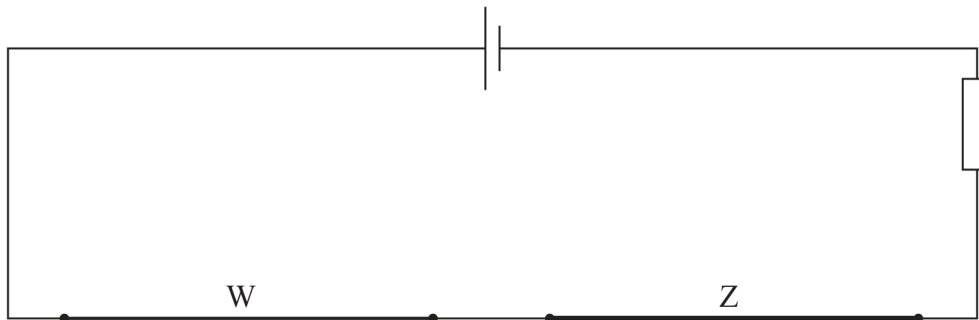
(4)

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P 7 1 8 6 5 A 0 1 0 2 4

(b) Wires W and Z are now connected in series as shown.

Complete the table by placing a cross in the correct box for each quantity.

(4)

Quantity	Same value for W and Z	Larger value in W	Larger value in Z
Current in the wires			
Resistance of the wires			
Potential difference across the wires			
Drift velocity of the charge carriers in the wires			

(Total for Question 13 = 8 marks)