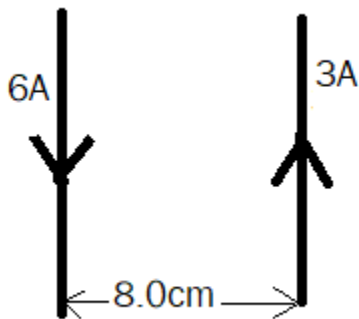




1. Use the ideas of the domain theory of magnetism to explain why the strength of a magnet cannot exceed a certain value when being magnetised.

2. Two straight long and parallel wires of negligible cross sectional area carry currents of 6.0A and 3.0A in opposite directions as shown in the figure below.

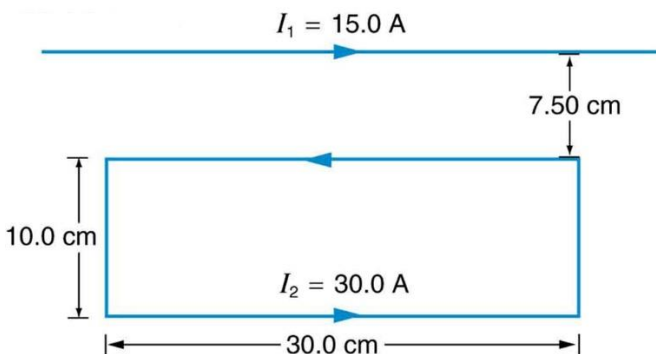


If the wires are separated by a distance of 8.0cm , find the;

(i) magnetic flux density at a point mid-way between the wires.

(ii) force per metre on each of the wires.

3.



A long straight conductor carrying a current of $I=15\text{A}$ is placed near a rectangular coil measuring 30cm by 10cm as shown. The side of the coil near the wire is 7.5cm away from it. A current of 30A flows in the coil. Calculate the resultant force on the rectangular coil.

4. Four long, thin and parallel wires at the vertices A,B,C,D of a rectangle carry currents of 4A , 6A , 2A and 8A respectively. Determine the force per metre exerted on the wire at corner D.

