

Learning Goals:

Verify the equation F=BIL
Apply Fleming's left hand rule to a range of problems

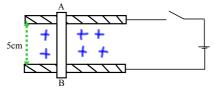
Problems:

1) A short horizontal length of wire carrying a current is held in the gap between a pair of ceramic magnets on an Iron yoke placed on a top pan balance. When there is a current of 3.2A in the wire, the balance reading changes by 0.43g. If the length of the wire between the magnets is 40mm, calculate the magnetic flux density in the gap between the magnets.

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2) The diagram represents a cylindrical aluminium bar labelled AB resting on two horizontal aluminium rails which can be connected to a battery to carry a current through AB. A magnetic field of flux density 0.1T acts perpendicularly into the paper and into it. In which direction will AB move if the current flows from A to B.



Calculate the angle to the horizontal that the rails must be tilted at to keep the rail AB stationary if it's mass is 5g, the current 4A and the direction of the field remains unchanged