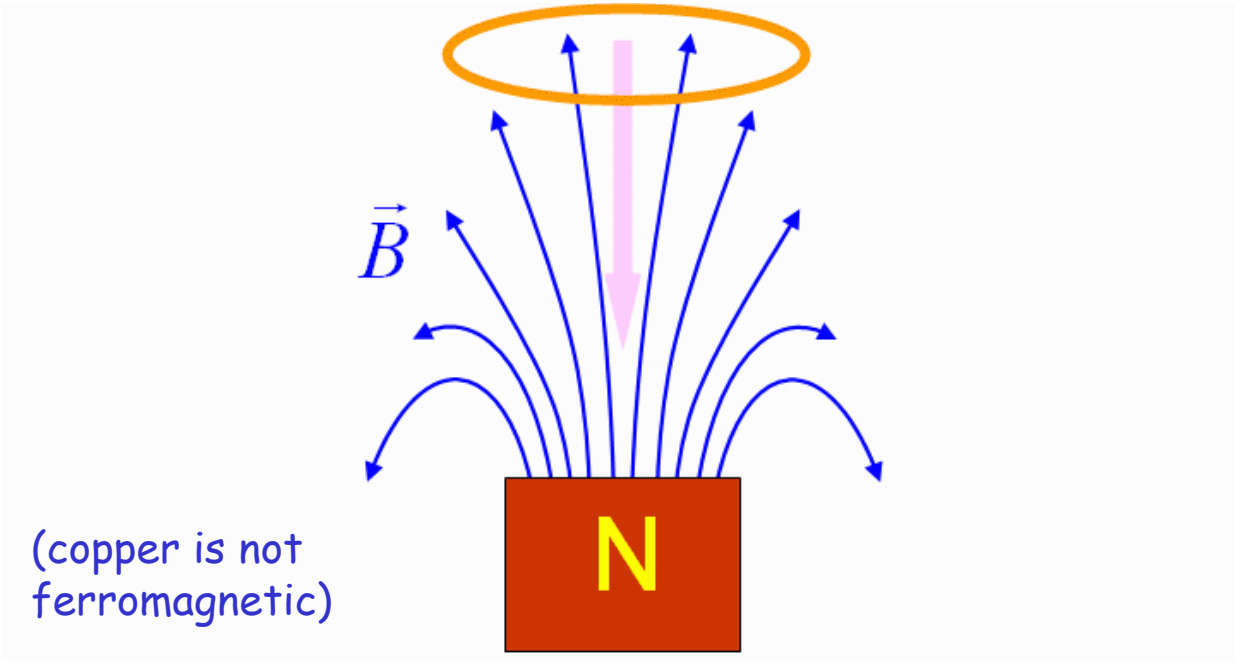
Cool Example

A horizontal copper ring is dropped from rest directly above the north pole of a permanent magnet



Will the acceleration *a* of the falling ring in the presence of the magnet be any different than it would have been under the influence of just gravity (i.e. *g*)?

A. $a > g$ ***B.*** $a = g$ ***C.*** $a < g$

This one is hard !

B field increases upward as loop falls

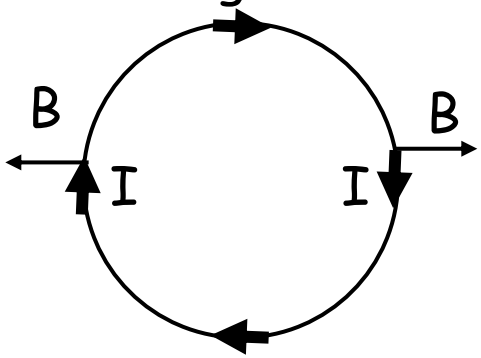
Clockwise current (viewed from top) is induced

Main Field produces horizontal forces

"Fringe" Field produces vertical force

HOW IT WORKS

Looking down



IL X B points UP

→ $F_{total} < mg$

→ $a < g$

Demo !

dropping magnets

e-m cannon