

WORKSHEET 7: Introduction to Magnetism

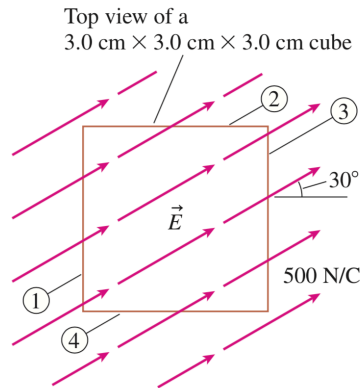
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COURSE: Physics 40C (Fall 2018), Dr. Laura Sales

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0 Review: Calculating Flux

Find the electric flux Φ_E through surface 1 in the figure below.



1 RHR Practice

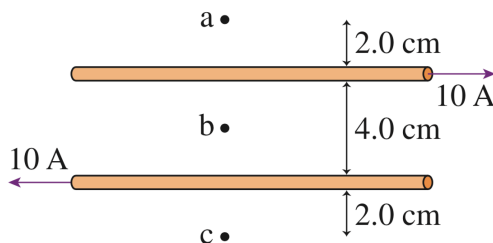
What is the direction of magnetic field at point P ?

•P



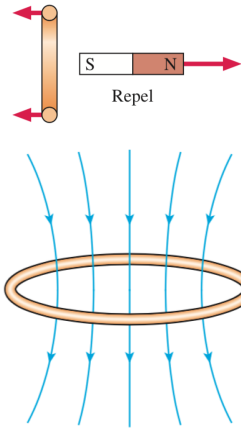
2 Magnetic Forces between Wires

Do the two current-carrying wires below attract or repel each other?



3 Investigating Magnetic Dipoles

What is the current direction in the loops below?



4 Motion

1. Describe the motion of a charged particle in a magnetic field. Does velocity parallel or anti-parallel to external \vec{B} field affect its trajectory?
2. Newton's second law for circular motion is

$$F_{tan} = \frac{mv^2}{r}$$

Find the radius of cyclotron orbit.