

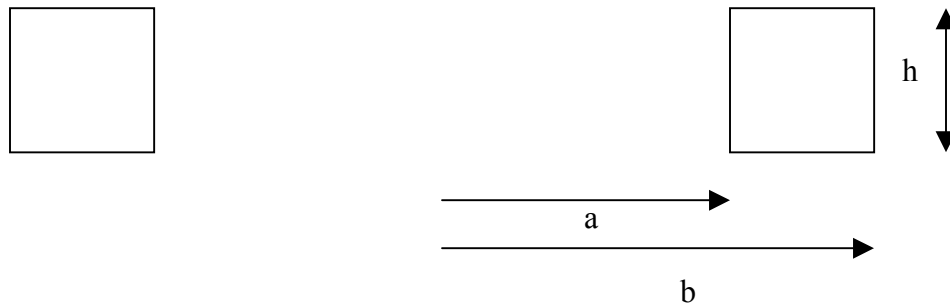
Preparation Assignments

Due Wednesday, October 29

For each of the following current distributions, sketch the surface you would use to apply Ampere's Law, identify $d\vec{S}$ for that surface, and all $d\vec{l}$ (s) for the line that bounds the surface.

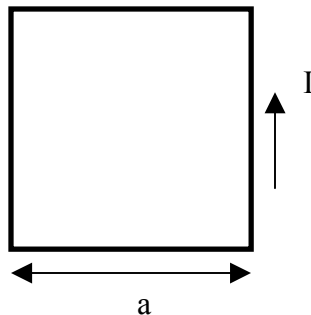
- 1) An infinite sheet of charge with current in the x direction.
- 2) A long wire wrapped solenoid.
- 3) A long straight wire with finite thickness.
- 4) A wire wrapped toroid with arbitrary cross-section

Due Thursday, October 30



A cut across a toroid is shown above. The cross-section is square with sides of length h . The toroid is wire wrapped with N total windings carrying current I . Determine the magnetic field inside the toroid.

Extra Credit - Due Thursday, October 30



Determine the magnetic field, at the center of a square loop with sides of length a and carrying current I .