Warmup 15 - Induction

b) Clockwise

Consider a rectangular metal loop of height L, moving to the right with speed v, which is exiting a region with a magnetic field magnitude B. B is increasing linearly in time. Which direction is the induced current (if any) in the loop? Please choose one. a) There is no induced current c) Counter-clockwise

d) Not enough information



Please explain your answer briefly but clearly:

A toroidal coil is centered at the origin as picture with current wrapping around as pictured. There is no current running in the phi-hat direction. The current, I, is decreasing in time. Is there an electric field induced at the origin? Please choose

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one.

a) Yes b) No c) Not enough information

If so, what direction does this electric field point at the origin? Please select ALL that apply.

a) there is no E-field	e) -y-hat
b) +x-hat	f) +z-hat
c) -x-hat	g) -z-hat
d) +y-hat	h) Not enough information

Please explain your answers to the previous two questions briefly but clearly:

Now assume the current, I, is large but not changing. In this case, what direction does this electric field point at the origin? a) there is no E-field e) -y-hat b) +x-hat c) -x-hat d) +y-hat f) +z-hat g) -z-hat h) Not enough information

Please explain your answer to the previous question briefly but clearly: