5.27 b

Suppose A is azimuthal, given by $\vec{\mathbf{A}} = \frac{C}{s}\hat{\varphi}$ (in cylindrical coordinates)

What can you say about curl(**A**)?

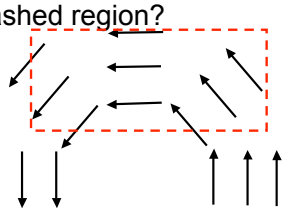
A) curl(**A**) =0 everywhere

B) curl(**A**) = 0 everywhere except at s=0.

C) curl(**A**) is nonzero everywhere

D) ???

5.24 If the arrows represent the vector potential **A** (note that |A| is the same everywhere), is there a nonzero **B** in the dashed region?



A. Yes
B. No
C. Need more information to decide

What is $\oint \vec{\mathbf{A}}(\vec{r}) \bullet d\vec{\mathbf{l}}$

A) The current density **J**
B) The magnetic field **B**
C) The magnetic flux Φ_B
D) It's none of the above, but is something simple and concrete
E) It has no particular physical interpretation at all

5.28

Choose all of the following statements that are implied by $\oiint \vec{B} \cdot d\vec{a} = 0$ (for any closed surface you like)

(I) $\vec{\nabla} \cdot \vec{B} = 0$

(II) $B^{//}_{above} = B^{//}_{below}$

(III) $B^{\perp}_{above} = B^{\perp}_{below}$

A) (II) only
B) (III) only
C) (I) and (II) only
D) (I) and (III) only
E) All of the above

5.28 b

In general, which of the following are continuous as you move past a boundary?

A) **A** B) Not all of **A**, just A_{perp}

C) Not all of **A**, just $A_{//}$

D) Nothing is guaranteed to be continuous regarding **A**