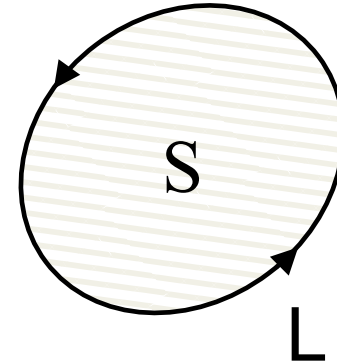
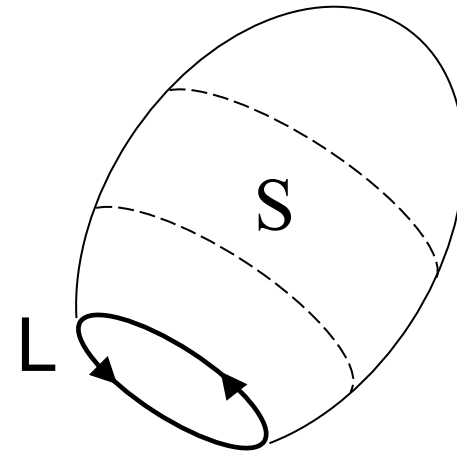


Stokes' Theorem says that for a surface S bounded by a perimeter L , any vector field \vec{B} obeys

$$\int_S \nabla \times \vec{B} \cdot d\vec{a} = \oint_{L(S)} \vec{B} \cdot d\vec{l}$$



Does Stokes' Theorem apply for *any* surface S bounded by a perimeter L , even one such as this balloon-shaped surface S :



A) Yes

B) No

C) Sometimes

Current I flows down a wire (length L) with a square cross section (side a)
If it is uniformly distributed over the entire wire area, what is the magnitude of the volume current density?

A) $J = I/a^2$

B) $J = I/a$

C) $J = I/(a^2L)$

D) $J = I/a^3$

E) None of the above!