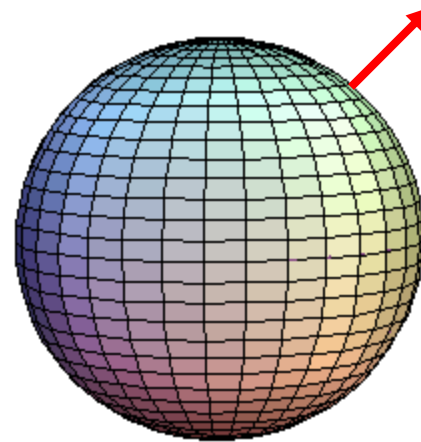
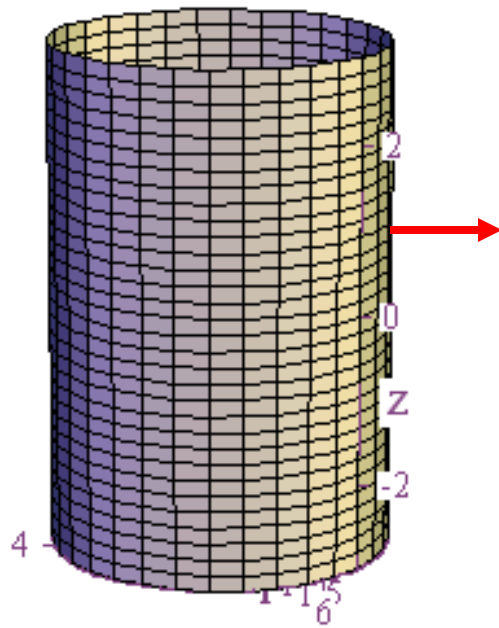


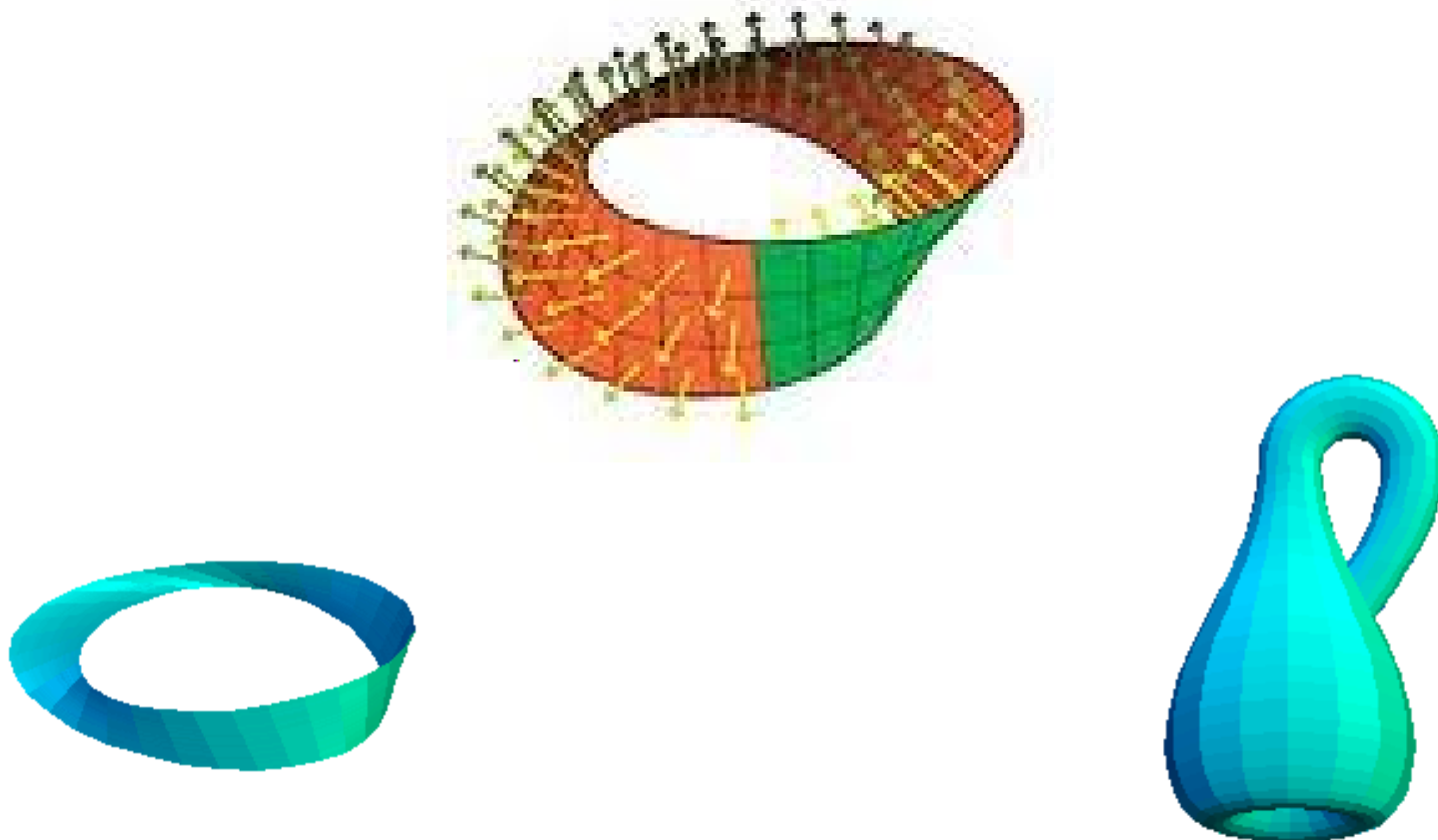
Orientable vs Non-Orientable Surfaces



Surfaces like cylinders and spheres are called orientable because we can define things such as unit normal vectors in a consistent way. The direction of the unit normal provides an orientation.



However, with a möbius band and a klein bottle, we have examples of surfaces that don't have consistent unit normal vectors. These surfaces are non-orientable.



If your surface is non-orientable, then forget about using Stokes' Theorem or the Divergence Theorem.

