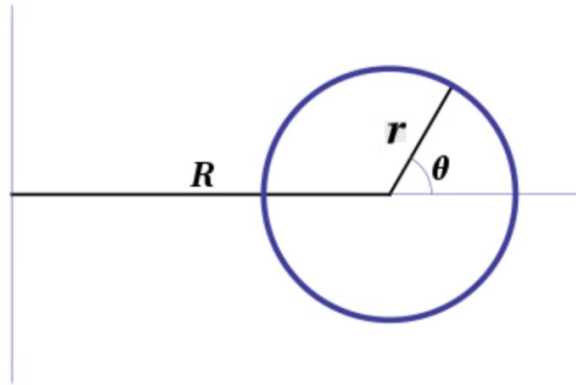
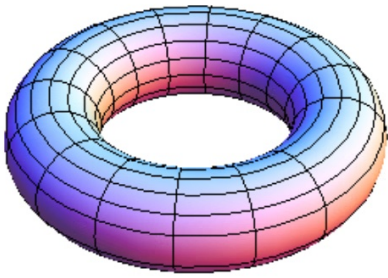


Torus



$$x = (R + r \cos \theta) \cos \phi$$

$$y = (R + r \cos \theta) \sin \phi$$

$$z = r \sin \theta$$

$$\Rightarrow ds^2 = r^2 d\theta^2 + (R + r \cos \theta)^2 d\phi^2$$

$$\Rightarrow \nabla^\theta = r d\theta$$

$$\nabla^\phi = (R + r \cos \theta) d\phi$$

$$\Rightarrow 0 = d\nabla^\theta = -\omega^\theta_\phi \wedge \nabla^\phi$$

$$-r \sin \theta d\theta \wedge d\phi = d\nabla^\theta = -\omega^\theta_\phi \wedge \nabla^\phi = \omega^\theta_\phi \wedge \nabla^\phi$$

$$\Rightarrow \omega^\theta_\phi = \sin \theta d\phi$$

$$\Rightarrow d\omega^\theta_\phi = \cos \theta d\theta \wedge d\phi$$

$$= \frac{\cos \theta}{r(R + r \cos \theta)} \omega$$

$$\Rightarrow \mathcal{K} = \frac{\cos \theta}{r(R + r \cos \theta)}$$