Torus

Def

A torus can be parameterized as:

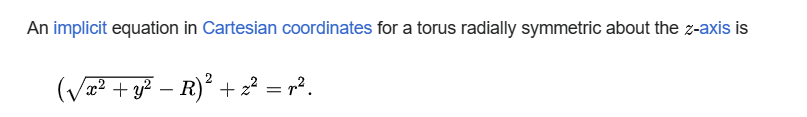
with angular to coordinates and belongs to where

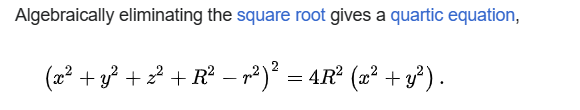
refers the rotation around the the tube while refers rotation of axis of revolution.

The major is the distance from the center of the tube to the center of the torus (one can consider as outer one) and the minor radius is the radius of the tube.

The aspect ratio of the torus is .

Relationship

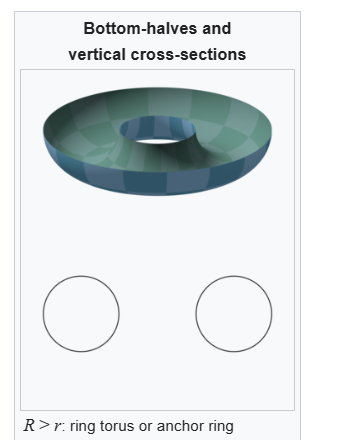




Case

Case 1: ,

=> familiar ring torus or anchor ring.



Case 2:

=> horn torus

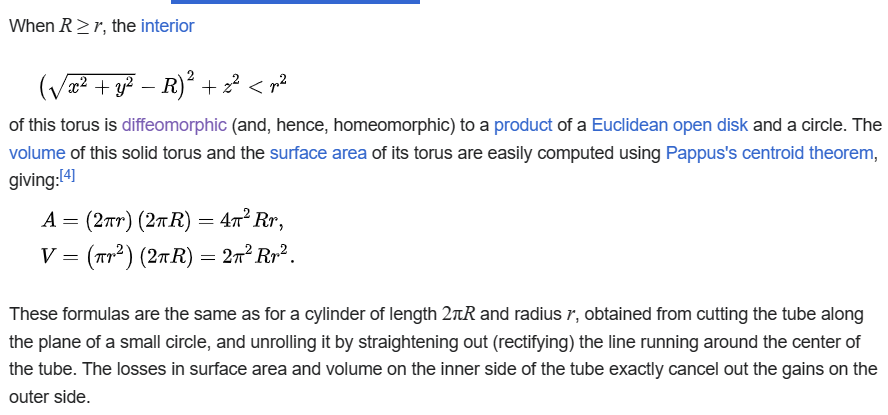
Case 3:

=> self-intersecting spindle torus; its inner shell is a [lemon](https://en.wikipedia.org/wiki/Lemon_(geometry)) and its outer shell is an [apple.](https://en.wikipedia.org/wiki/Apple_(geometry))

Case 4:

=> torus degenerates to the sphere

When =>



Ref

[Torus - Wikipedia](https://en.wikipedia.org/wiki/Torus)