

Exercise 6

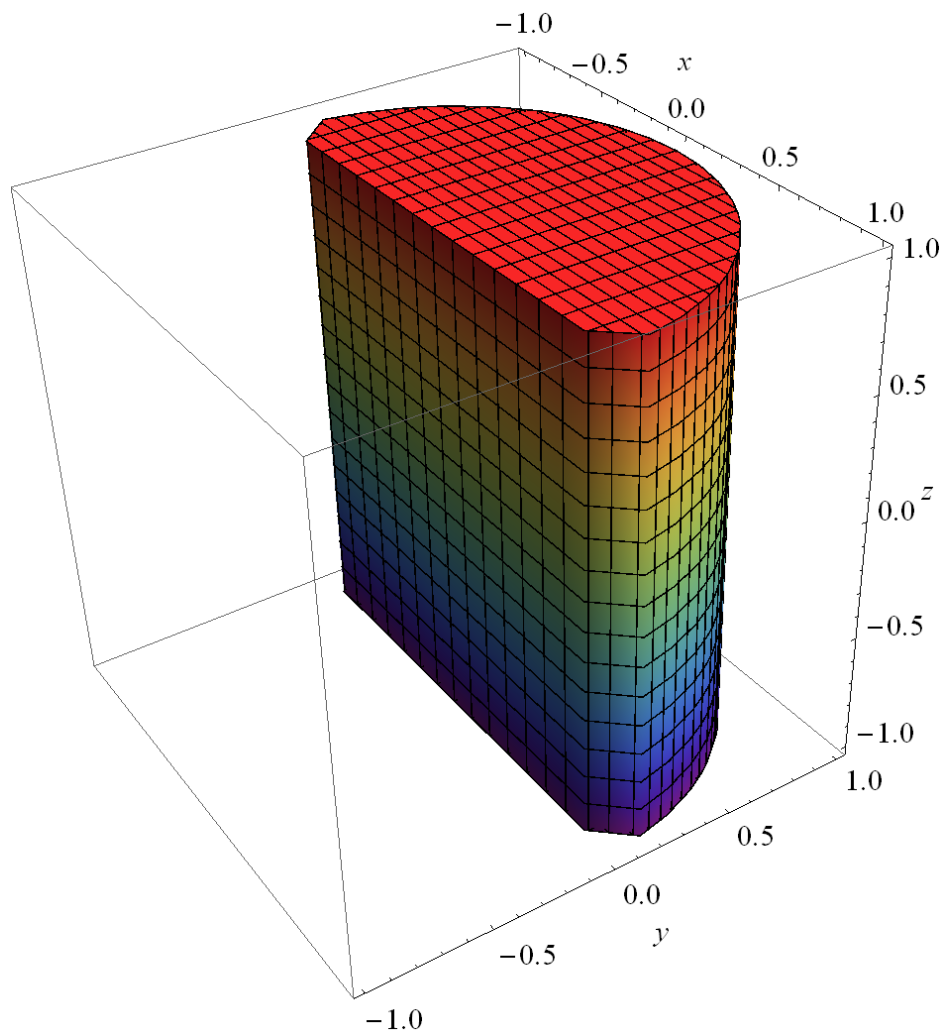
Sketch the following solids:

- (a) $r \in [0, 1], \theta \in [0, \pi], z \in [-1, 1]$
- (b) $r \in [0, 2], \theta \in [0, \pi/2], z \in [0, 4]$
- (c) $\rho \in [0, 1], \theta \in [0, 2\pi], \phi \in [0, \pi/4]$
- (d) $\rho \in [1, 2], \theta \in [0, 2\pi], \phi \in [0, \pi/2]$

Solution

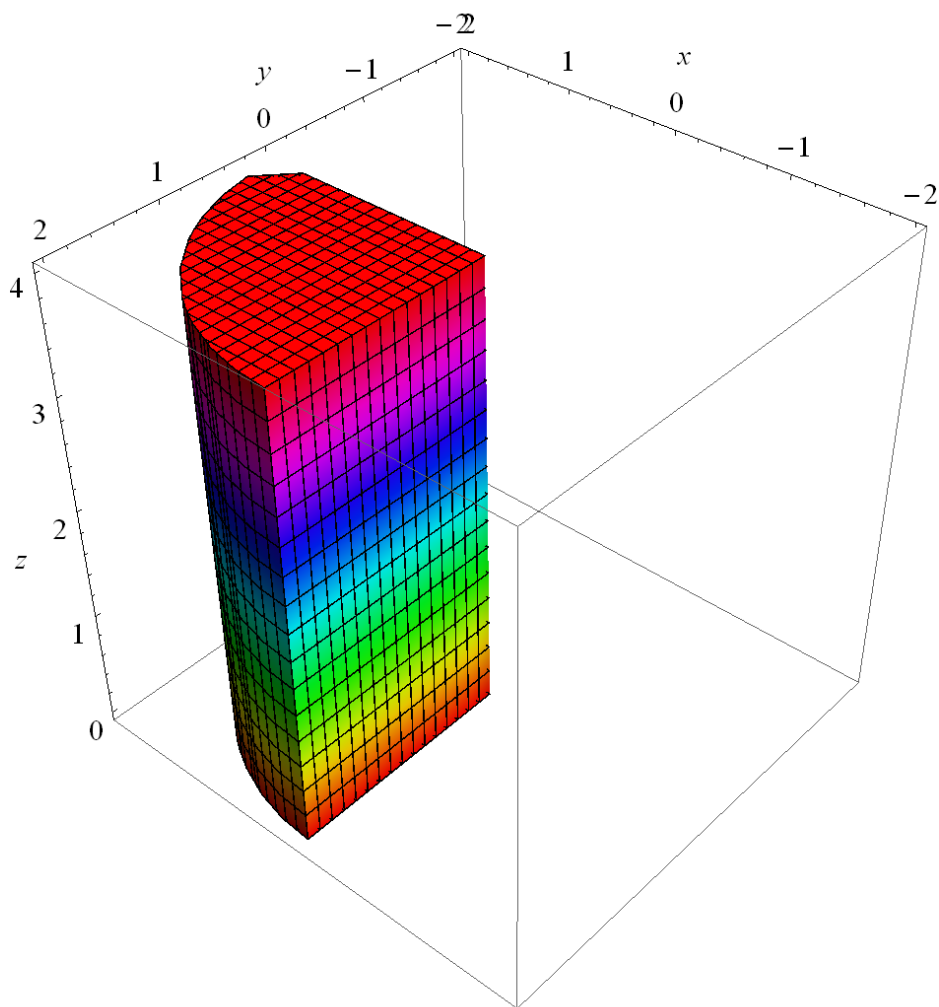
Part (a)

$r \in [0, 1], \theta \in [0, \pi], z \in [-1, 1]$ is half of a cylinder.



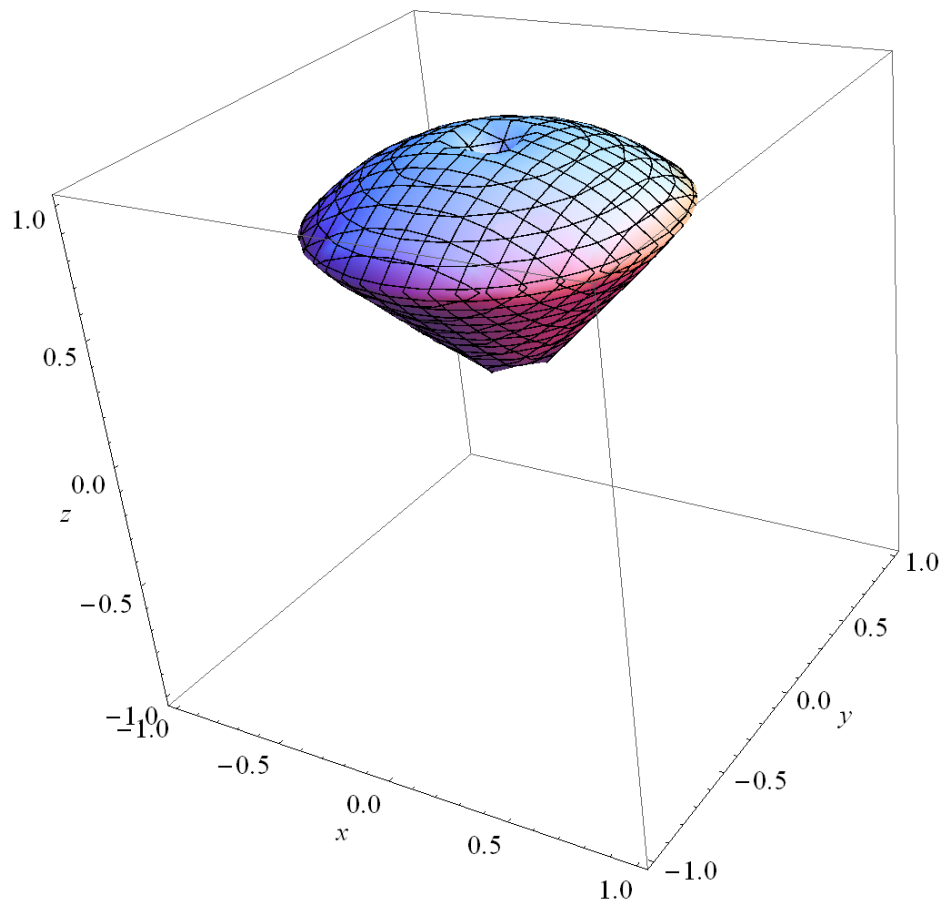
Part (b)

$r \in [0, 2]$, $\theta \in [0, \pi/2]$, $z \in [0, 4]$ is a quarter-cylinder.



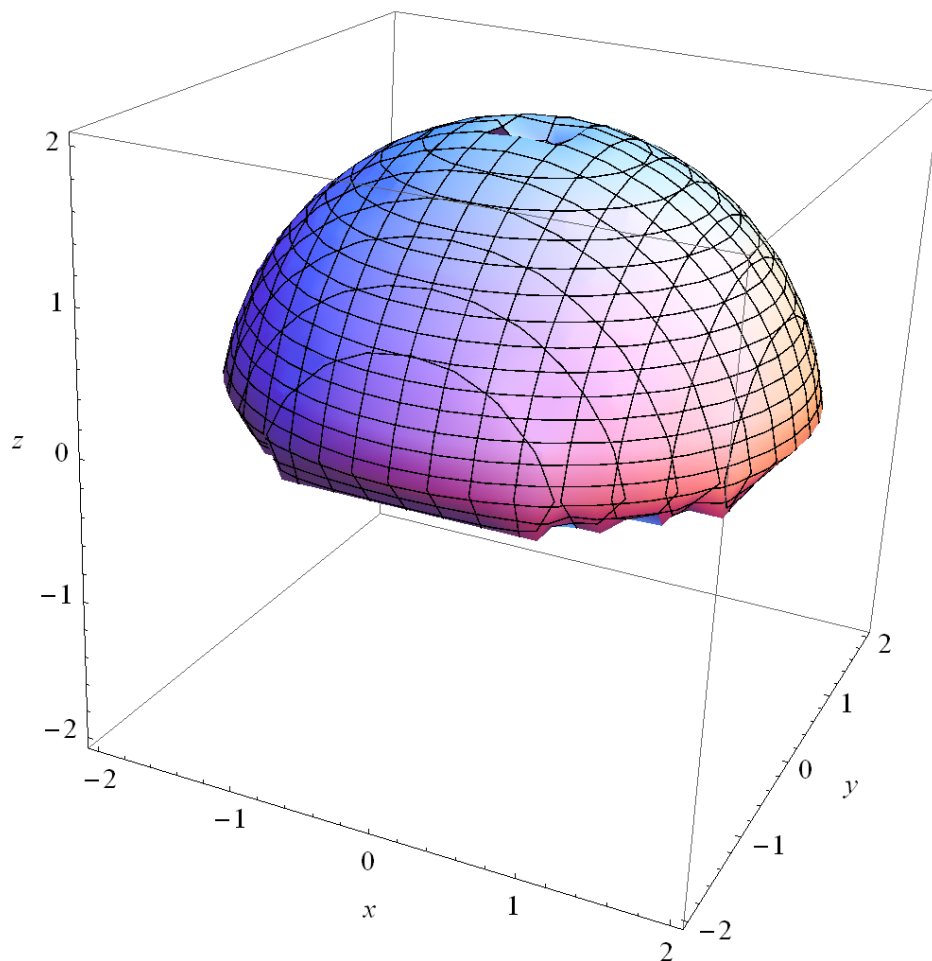
Part (c)

$\rho \in [0, 1]$, $\theta \in [0, 2\pi]$, $\phi \in [0, \pi/4]$ is an ice cream cone, diamond, or UFO.



Part (d)

$\rho \in [1, 2]$, $\theta \in [0, 2\pi]$, $\phi \in [0, \pi/2]$ is a thick bowl. This first figure is a view of the dorsal side.



This second figure is a view of the ventral side.

