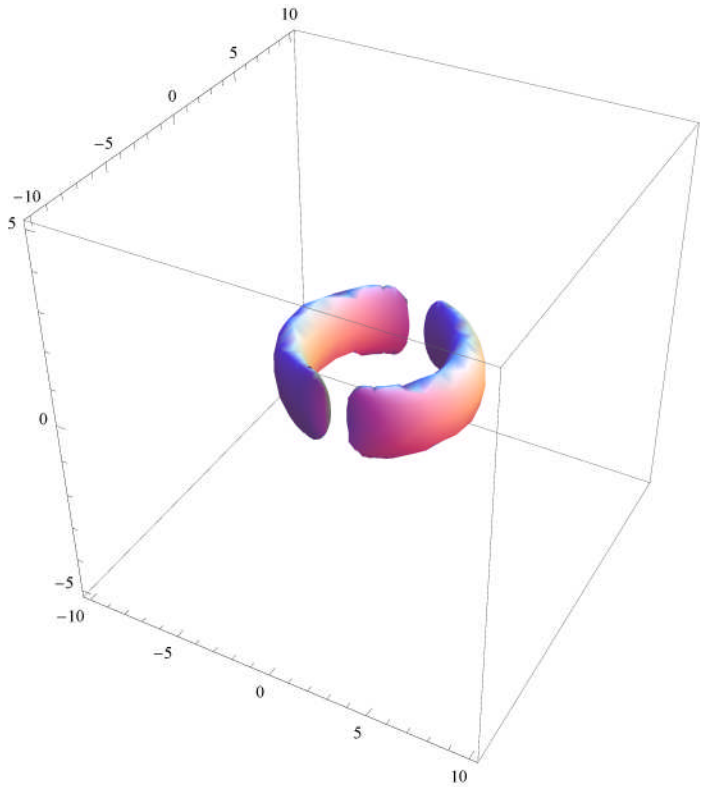
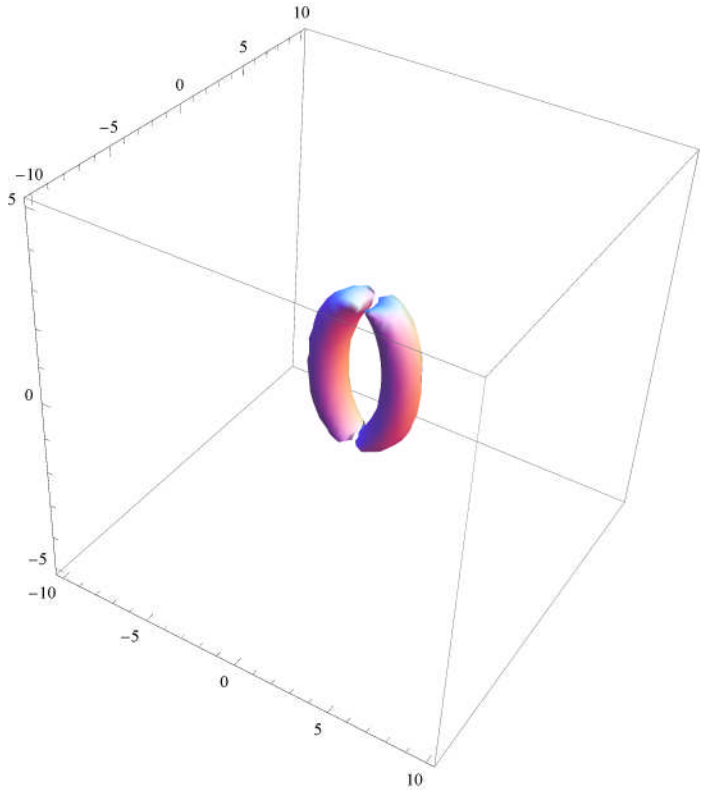
トーラスもどき

```
torusm[x_, y_, z_, r0_, r1_] := (x^2 - y^2 + z^2 + r1^2 - r0^2) ^2 - 4 x^2 (r1^2 - y^2)
```

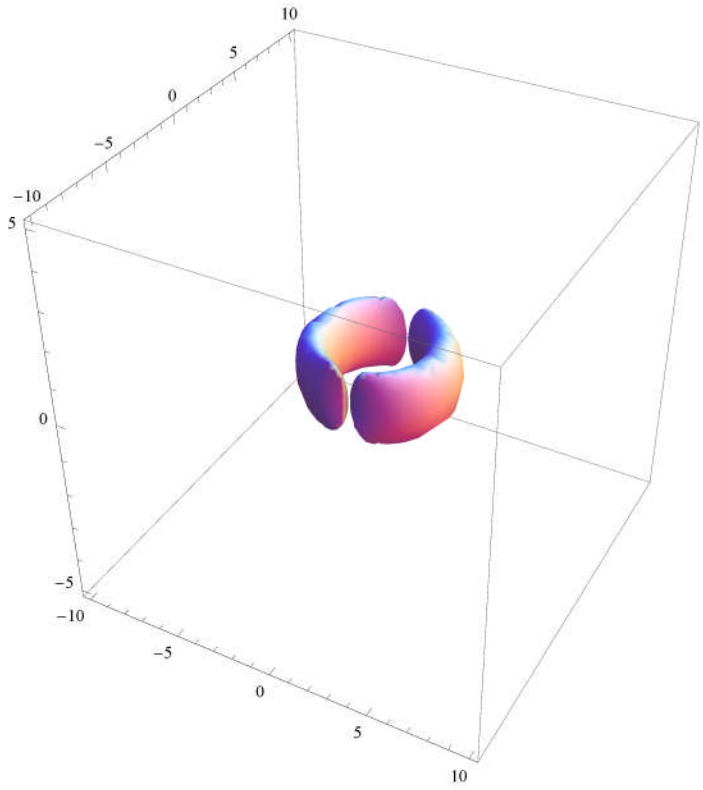
```
ContourPlot3D[{torusm[x, y, z, 1, 4] == 0}, {x, -10, 10}, {y, -10, 10}, {z, -5, 5},
 AspectRatio → Automatic, MeshStyle → None, WorkingPrecision → 100]
```



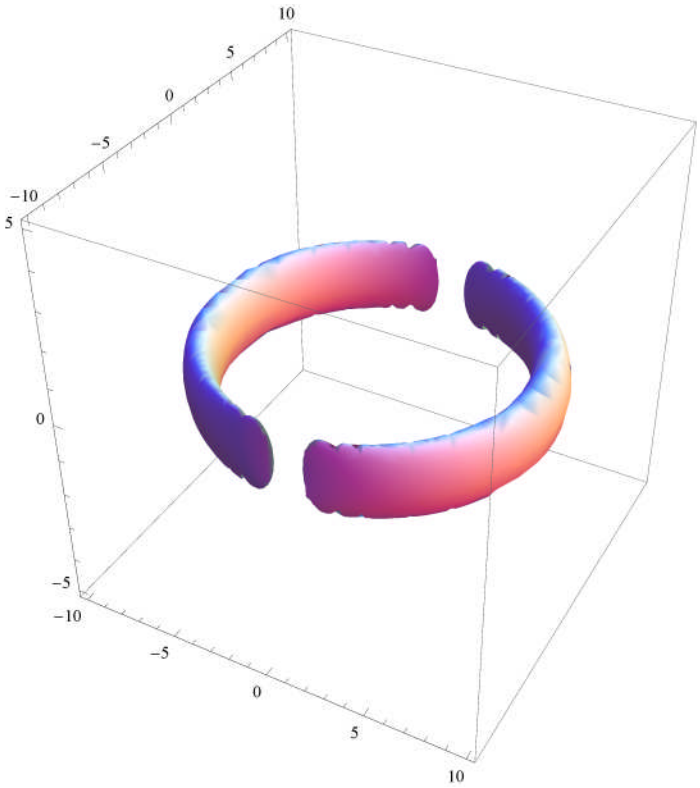
```
ContourPlot3D[{torusm[x, y, z, 2, 1] == 0}, {x, -10, 10}, {y, -10, 10}, {z, -5, 5},
 AspectRatio → Automatic, MeshStyle → None, WorkingPrecision → 100]
```




```
ContourPlot3D[{torusm[x, y, z, 1, 3] == 0}, {x, -10, 10}, {y, -10, 10}, {z, -5, 5},
 AspectRatio → Automatic, MeshStyle → None, WorkingPrecision → 100]
```

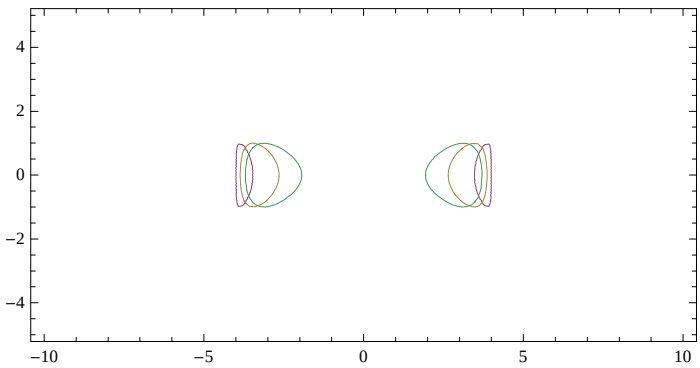


```
ContourPlot3D[{torusm[x, y, z, 1, 8] == 0}, {x, -10, 10}, {y, -10, 10}, {z, -5, 5},
 AspectRatio → Automatic, MeshStyle → None, WorkingPrecision → 100]
```



x=cによる断面図

```
ContourPlot[{torusm[0, y, z, 1, 4] == 0, torusm[-1, y, z, 1, 4] == 0,
  torusm[-2, y, z, 1, 4], torusm[-5 / 2, y, z, 1, 4] == 0}, {y, -10, 10},
 {z, -5, 5}, AspectRatio → Automatic, PlotLegends → "Expressions"]
```



$\left(-y^2+z^2+15\right)^2=0$

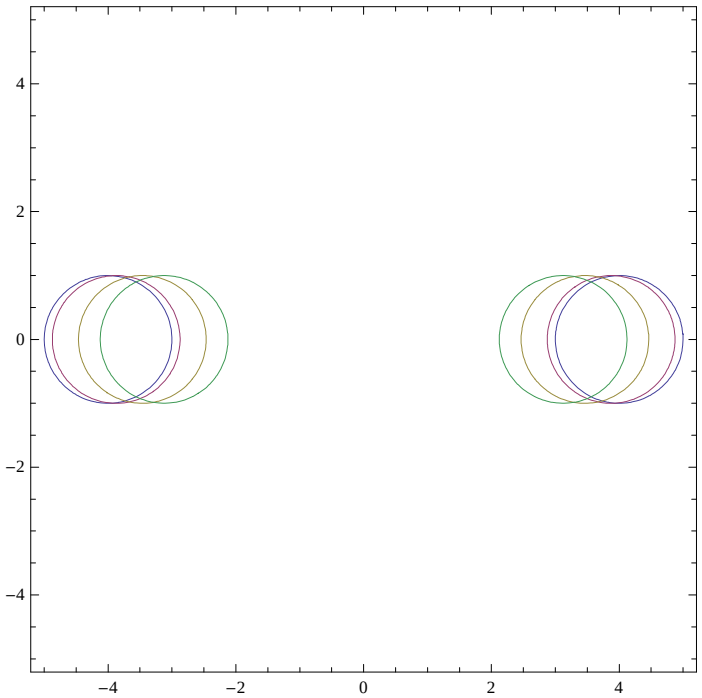
$\left(-y^2+z^2+16\right)^2-4\left(16-y^2\right)=0$

$\left(-y^2+z^2+19\right)^2-16\left(16-y^2\right)=0.$

$\left(-y^2+z^2+\frac{85}{4}\right)^2-25\left(16-y^2\right)=0$

y=cによる断面図

```
ContourPlot[{torusm[x, 0, z, 1, 4] == 0, torusm[x, -1, z, 1, 4] == 0,
  torusm[x, -2, z, 1, 4] == 0, torusm[x, -5 / 2, z, 1, 4] == 0}, {x, -5, 5},
 {z, -5, 5}, AspectRatio → Automatic, PlotLegends → "Expressions"]
```



$\left(x^2+z^2+15\right)^2-64\,x^2=0$

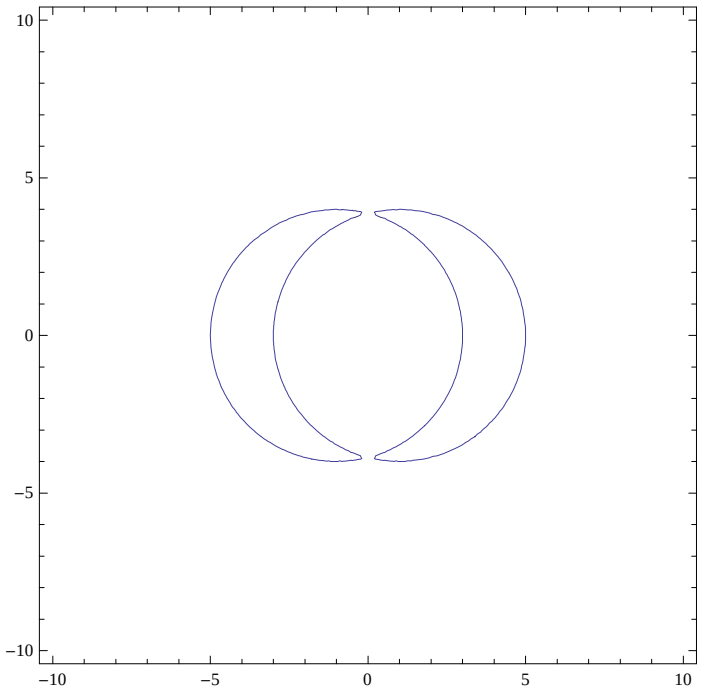
$\left(x^2+z^2+14\right)^2-60\,x^2=0$

$\left(x^2+z^2+11\right)^2-48\,x^2=0$

$\left(x^2+z^2+\frac{35}{4}\right)^2-39\,x^2=0$

z=0による断面図

```
ContourPlot[{torusm[x, y, 0, 1, 4] == 0}, {x, -10, 10},
 {y, -10, 10}, AspectRatio → Automatic, PlotLegends → "Expressions"]
```



$\left(x^2-y^2+15\right)^2-4\,x^2\left(16-y^2\right)=0$