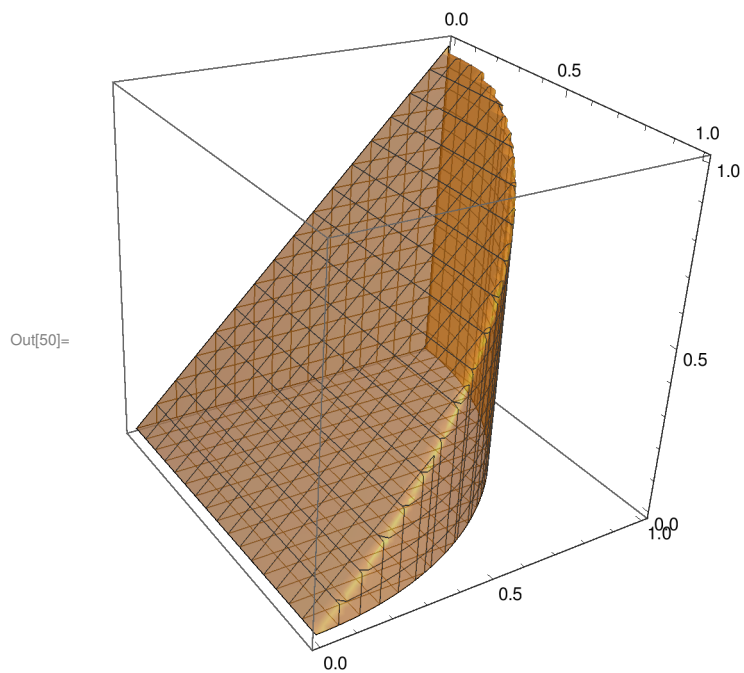
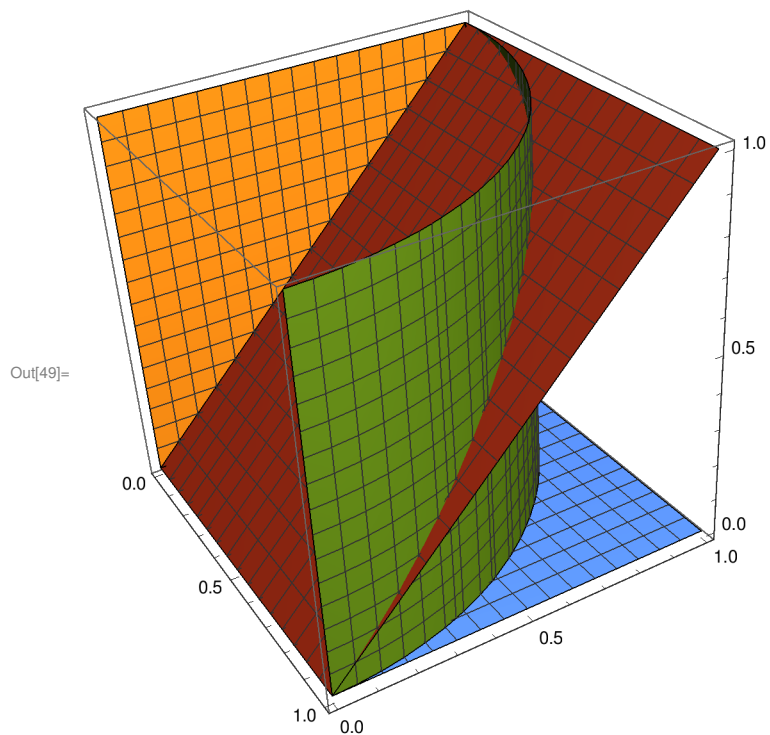


```

In[49]:= (* We compute the volume of a solid in the first octant bounded by  $x^2+y^2=1$ ,
 $y=z, x=0, z=0$  *)
ContourPlot3D[{x == 0, z == 0, x^2 + y^2 == 1, z == y}, {x, 0, 1}, {y, 0, 1}, {z, 0, 1}]
RegionPlot3D[x >= 0 && z >= 0 && x^2 + y^2 <= 1 && z <= y, {x, 0, 1},
{y, 0, 1}, {z, 0, 1}, PlotPoints -> 50, PlotStyle -> Opacity[.6]]

```



```
In[51]:= (* Using a double integral *)
Integrate[y, {y, 0, Sqrt[1 - x^2]}]
Integrate[%, {x, 0, 1}]
```

```
Out[51]=  $\frac{1}{2} (1 - x^2)$ 
```

```
Out[52]=  $\frac{1}{3}$ 
```

```
In[53]:= (* Using a triple integral *)
Integrate[1, {z, 0, y}]
Integrate[%, {y, 0, Sqrt[1 - x^2]}]
Integrate[%, {x, 0, 1}]
```

```
Out[53]= y
```

```
Out[54]=  $\frac{1}{2} (1 - x^2)$ 
```

```
Out[55]=  $\frac{1}{3}$ 
```