

```
In[13]:= F[x_, y_, z_] := x^2 + y^2 + z
```

```
integral = Integrate[  
  F[x, y, z],  
  {x, -1, 1},  
  {y, -Sqrt[1 - x^2], Sqrt[1 - x^2]},  
  {z, -Sqrt[1 - x^2 - y^2], Sqrt[1 - x^2 - y^2]}  
]  
RegionPlot3D[  
  x^2 + y^2 + z^2 ≤ 1,  
  {x, -1, 1}, {y, -1, 1}, {z, -1, 1},  
  PlotPoints → 100,  
  AxesLabel → {"x", "y", "z"},  
  PlotRange → {{-1, 1}, {-1, 1}, {-1, 1}},  
  Boxed → True,  
  Mesh → None,  
  PlotStyle → Opacity[0.7, Blue],  
  PlotLabel → "Region bounded by a sphere"  
]
```

```
Out[23]=
```

$$\frac{8\pi}{15}$$

Out[24]=

