

```
syms x y z
>> syms x y z r theta
>> u=linspace(0,2*pi,41); v=linspace(-1,1,41); [U,V]=meshgrid(u,v); surf(cos(U),sin(U),V);
>> hold on
>> surf(cos(U),V,sin(U))
>> hold off
>> int(int(int(1,z,0,sqrt(1-x^2)),y,0,sqrt(1-x^2)),x,0,1)
```

ans =

$\frac{2}{3}$

```
>> ans*8
```

ans =

$\frac{16}{3}$

```
>>
```