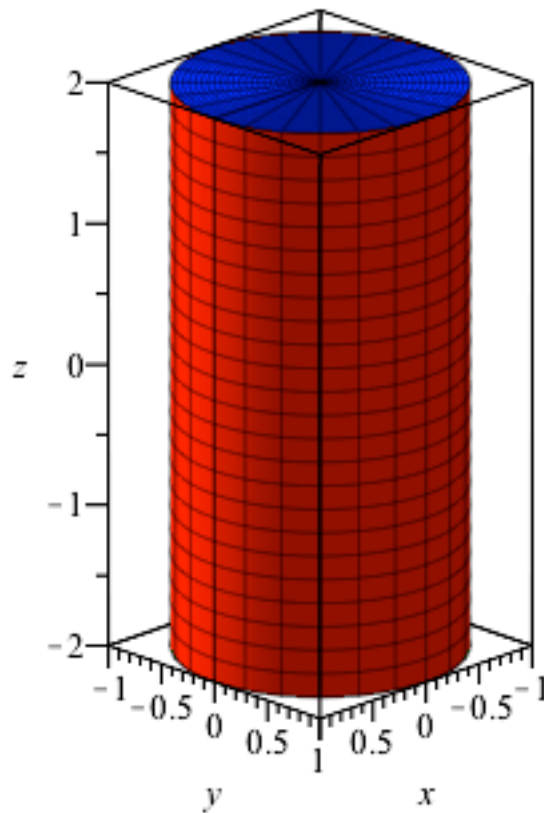


```

> with(plots) :
> A := 1 :
> H := 2 :
> Topp := plot3d([r, theta, H], r = 0 .. A, theta = 0 .. 2·Pi, coords = cylindrical, color = "Blue") :
> Bunn := plot3d([r, theta, -H], r = 0 .. A, theta = 0 .. 2·Pi, coords = cylindrical, color = "Green") :
> Cylinder := plot3d([A·cos(theta), A·sin(theta), z], theta = 0 .. 2·Pi, z = -H .. H, color = "Red") :
> display(Topp, Bunn, Cylinder, scaling = constrained, axes = boxed, labels = [x, y, z], orientation
= [45, 70]);

```



```

> with(Student[VectorCalculus]) :
> F := (x, y, z) → VectorField(⟨x, y, z⟩) :
> n := (theta, z) → ⟨cos(theta), sin(theta), 0⟩ :
> F(a·cos(theta), a·sin(theta), z)·n(theta, z);

```

$$a \cos(\theta)^2 + a \sin(\theta)^2 \quad (1)$$

```

> SurfaceInt((1), [x, y, z] = Surface(⟨a·cos(theta), a·sin(theta), z⟩, theta = 0 .. 2·Pi, z = -h .. h))
assuming a > 0 and h > 0;

```

$$4 \pi a^2 h \quad (2)$$

```

>

```