A few items about some of the plots functions.

L. F. Rossi

In addition to the features described in your “Maple Tutorial” for this class, there are two functions of special interest to you in the plots package.

- **cylinderplot**
  
The *cylinderplot* function will plot surfaces in cylindrical coordinates. If you provide a single function, it is assumed that the function represents the distance from the z-axis, \( r \), as a function of \( \theta \) and \( z \). Thus,

\[
\text{cylinderplot}(3, \theta=0..2\pi, z=-6..6);
\]

will render a cylinder of radius 3, and

\[
\text{cylinderplot}(3+\cos(4\theta), \theta=0..2\pi, z=-6..6);
\]

will render a bumpy cylinder.

However, if you provide a list of three functions, it will treat them as a parametric surface, similar to *plot3d* parametric capabilities.

- **sphereplot**
  
The *sphereplot* function will plot surfaces in spherical coordinates. If you provide a single function, it is assumed that the function represents the distance from the origin \( \rho \) as a function of \( \theta \) and \( \phi \). Thus,

\[
\text{sphereplot}(3, \theta=0..2\pi, \phi=0..\pi);
\]

will render a sphere of radius 3, and

\[
\text{sphereplot}(3+\cos(\theta)\sin(6\phi), \theta=0..2\pi, \phi=0..\pi);
\]

will render a spiny sphere, but you may have to increase *numpoints*.

However, if you provide a list of three functions, it will treat them as a parametric surface, similar to *plot3d* parametric capabilities.