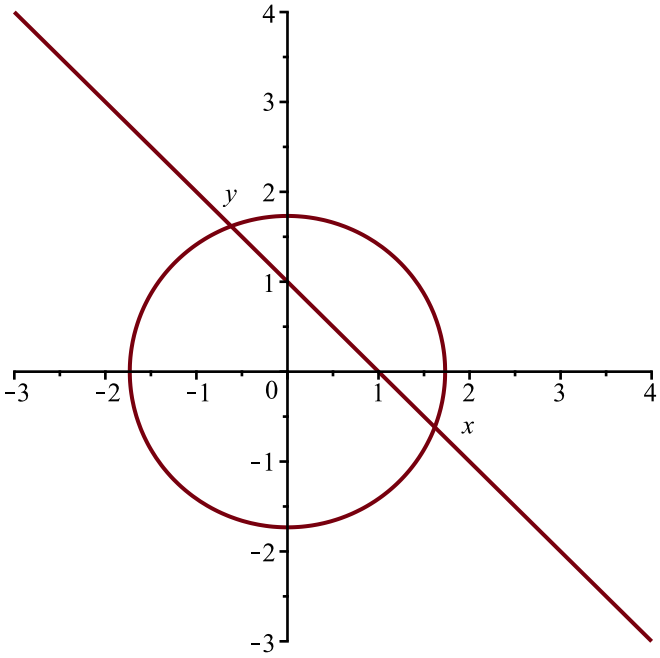
```
> f1,f2 := x^2+y^2=3, x+y=1;
```

$$f1, f2 := x^2 + y^2 = 3, x + y = 1 \tag{1}$$

```
> with(plots);
```

[*animate, animate3d, animatecurve, arrow, changecoords, complexplot, complexplot3d, conformal, conformal3d, contourplot, contourplot3d, coordplot, coordplot3d, densityplot, display, dualaxisplot, fieldplot, fieldplot3d, gradplot, gradplot3d, implicitplot, implicitplot3d, inequal, interactive, interactiveparams, intersectplot, listcontplot, listcontplot3d, listdensityplot, listplot, listplot3d, loglogplot, logplot, matrixplot, multiple, odeplot, pareto, plotcompare, pointplot, pointplot3d, polarplot, polygonplot, polygonplot3d, polyhedra_supported, polyhedraplot, rootlocus, semilogplot, setcolors, setoptions, setoptions3d, shadebetween, spacecurve, sparsematrixplot, surfdata, textplot, textplot3d, tubeplot*] (2)

```
> implicitplot([f1,f2],x=-4..4, y=-4..4 );
```




```
> f1,f2;
```

$$x^2 + y^2 = 3, x + y = 1 \tag{3}$$

```
> sols := solve({f1,f2},{x,y});
```

$$sols := \{x = -RootOf(\_Z^2 - \_Z - 1) + 1, y = RootOf(\_Z^2 - \_Z - 1)\} \tag{4}$$

```
> solve(z^2-z-1=0,z);
```

$$\frac{\sqrt{5}}{2} + \frac{1}{2}, -\frac{\sqrt{5}}{2} + \frac{1}{2} \tag{5}$$

```
> allvalues(sols);
```

$$\left\{x = -\frac{\sqrt{5}}{2} + \frac{1}{2}, y = \frac{\sqrt{5}}{2} + \frac{1}{2}\right\}, \left\{x = \frac{\sqrt{5}}{2} + \frac{1}{2}, y = -\frac{\sqrt{5}}{2} + \frac{1}{2}\right\} \tag{6}$$

```
> f1,f2,f3 := x+y+z-1,x-y+z-2,y-z;
```

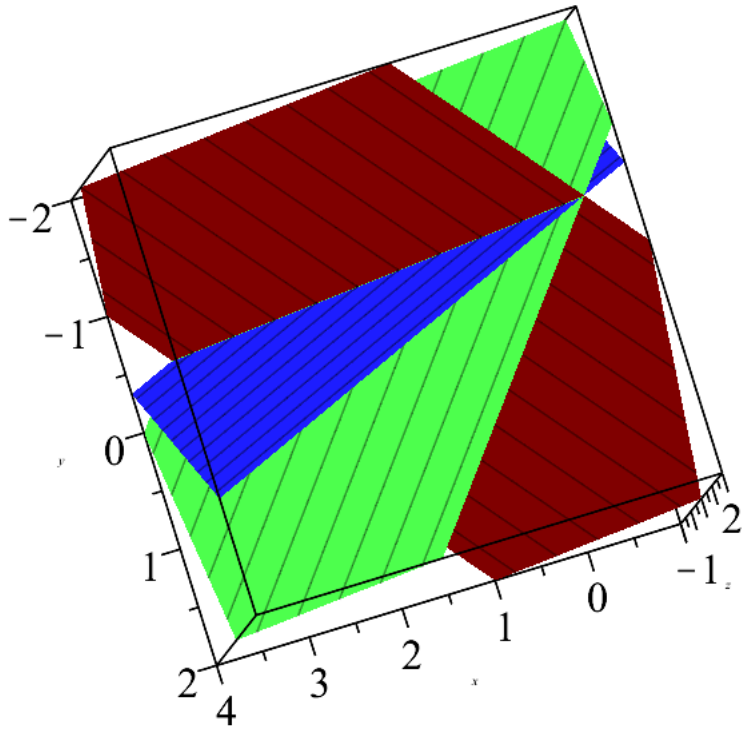
$$f1, f2, f3 := x + y + z - 1, x - y + z - 2, y - z \tag{7}$$

```
> solve({f1,f2,f3},{x,y,z});
```

(8)

$$\left\{x = 2, y = -\frac{1}{2}, z = -\frac{1}{2}\right\} \quad (8)$$

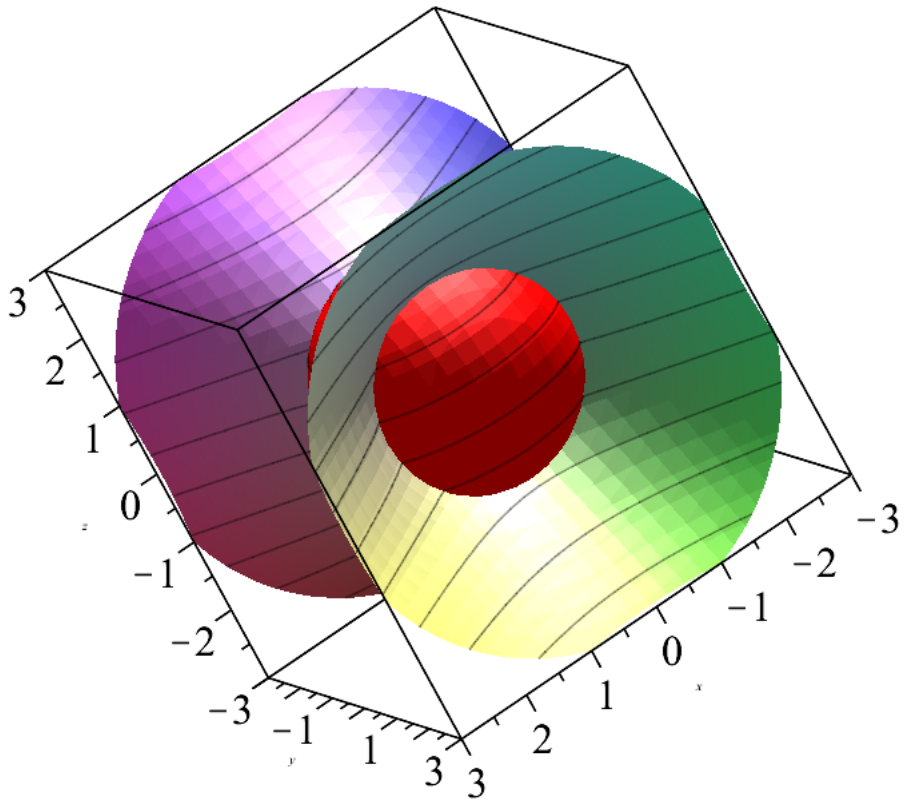
```
> implicitplot3d( [f1,f2,f1-2*f2],x=-1..4,y=-2..2,z=-2..2, color=
  [red,green,blue], style=patchcontour );
```




```
> f1,f2 := x^2+y^2+z^2-3, x^2-y^2+z^2-1;
```

$$f1, f2 := x^2 + y^2 + z^2 - 3, x^2 - y^2 + z^2 - 1 \quad (9)$$

```
> implicitplot3d( [f1,f2],x=-3..3, y=-3..3, z=-3..3, color=[red,
  default], style=patchcontour , grid=[25,25,25]);
```




```
> G := Groebner[Basis]([f1,f2],plex(x,y,z));
```

$$G := \left[y^2 - 1, x^2 + z^2 - 2\right] \tag{10}$$

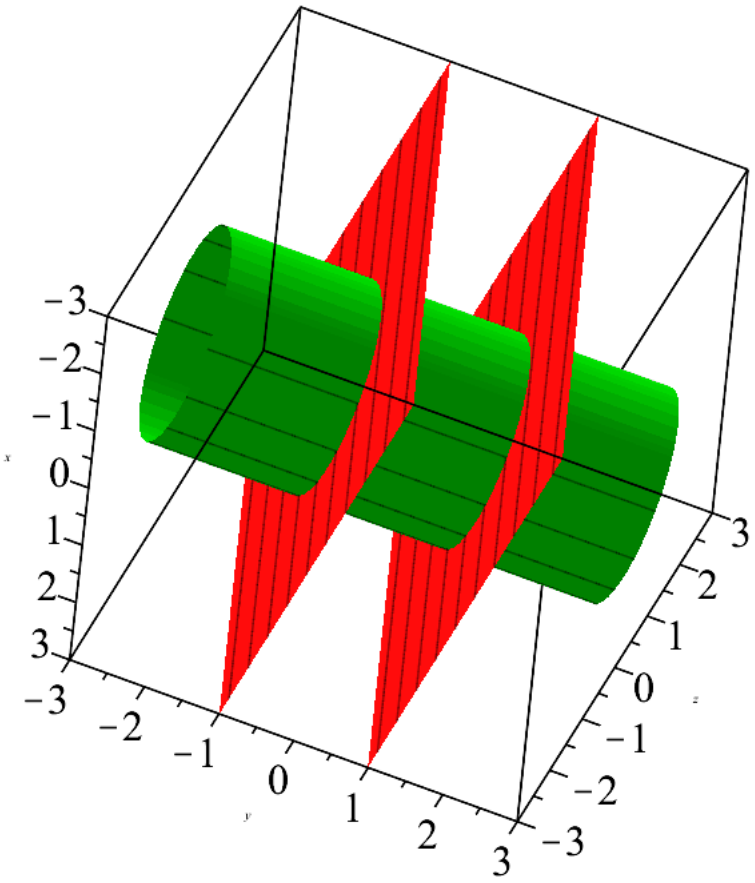
```
> f1,f2;
```

$$x^2 + y^2 + z^2 - 3, x^2 - y^2 + z^2 - 1 \tag{11}$$

```
> f1-f2;
```

$$2\,y^2 - 2 \tag{12}$$

```
> implicitplot3d(G,x=-3..3, y=-3..3, z=-3..3, color=[red,green],
  style=patchcontour, grid=[30,30,30] );
```



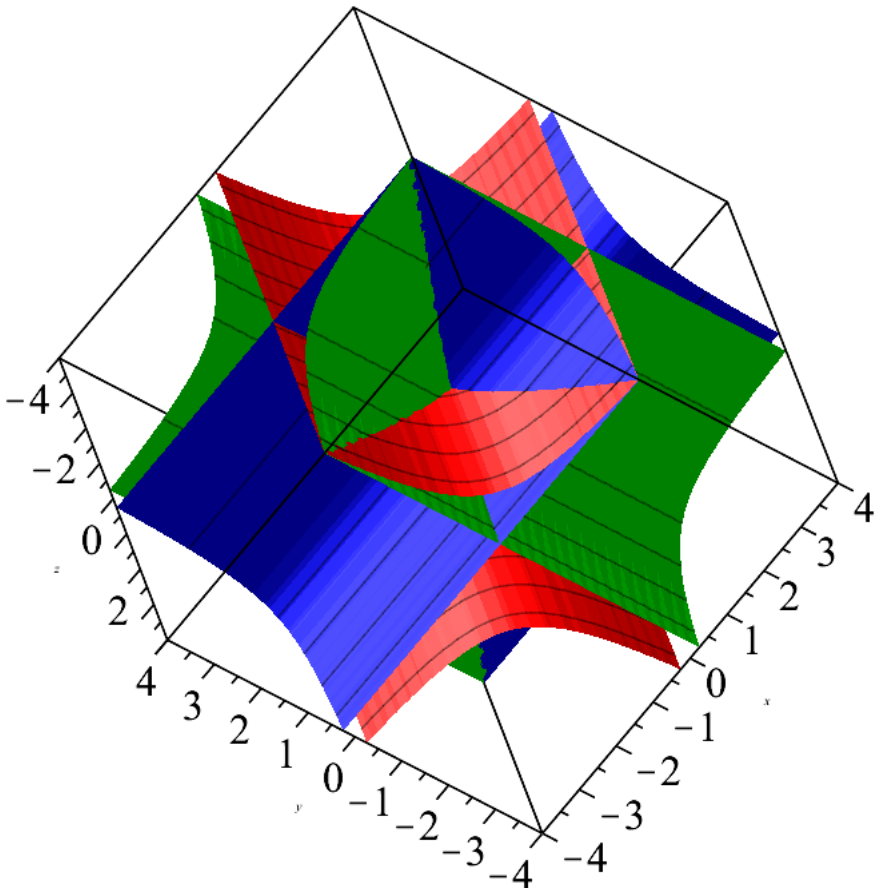

```
> f1,f2,f3 := x*y-1,x*z-1,y*z-1;
```

$$f1, f2, f3 := x\,y - 1, x\,z - 1, y\,z - 1 \tag{13}$$

```
> solve({f1,f2,f3},{x,y,z});
```

$$\{x = 1, y = 1, z = 1\}, \{x = -1, y = -1, z = -1\} \tag{14}$$

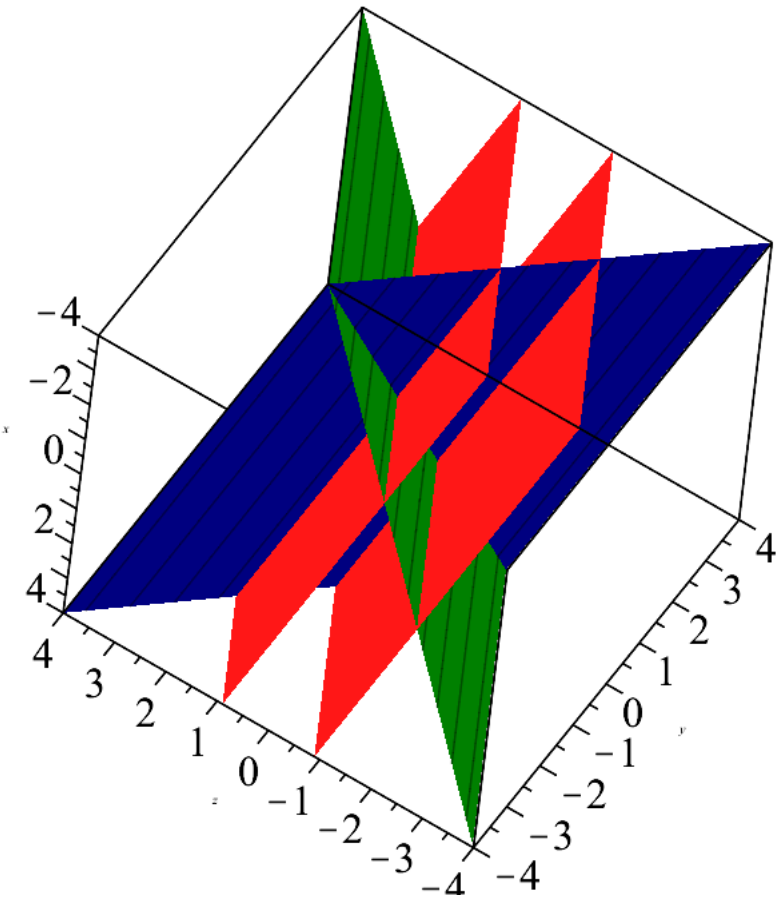
```
> implicitplot3d( [f1,f2,f3],x=-4..4, y=-4..4, z=-4..4, color=[red,
  green,blue], style=patchcontour, grid=[30,30,30] );
```




```
> G := Groebner[Basis]([f1,f2,f3],plex(x,y,z));
```

$$G := [z^2 - 1, y - z, -z + x] \tag{15}$$

```
> implicitplot3d( G,x=-4..4, y=-4..4, z=-4..4, color=[red,green,
  blue], style=patchcontour );
```


−4
−2
0
2
4
4
3
2
1
0
−1
−2
−3
−4
−4
−3
−2
−1
0
1
2
3
4