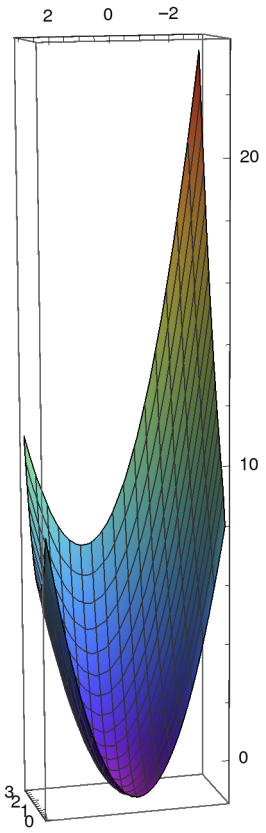
In[17]:=
```
SetOptions[Plot3D(*Or whichever plot you desire*),
  ColorFunction → "Rainbow"(*One of many options*)];
color[{x_, y_}] := Hue[(Pi + Arg[x + y I]) / (2 Pi)];
```

In[109]:=
```
SetOptions[ContourPlot(*Or whichever plot you desire*),
  ContourStyle → {Red}(*One of many options*)];
SetOptions[ContourPlot3D(*Or whichever plot you desire*),
  ColorFunction → Red(*One of many options*)];
color[{x_, y_}] := Hue[(Pi + Arg[x + y I]) / (2 Pi)];


(* Intro *)
```

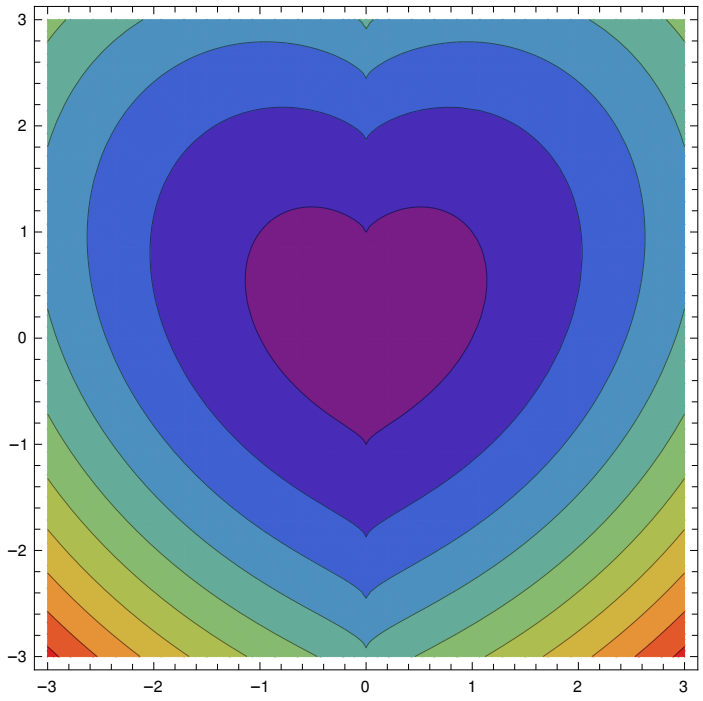
In[ ]:=
```
Plot3D[{x^2 + y^2 - 1 - x^(2 / 3) * y}, {x, -3, 3}, {y, -3, 3}, BoxRatios → Automatic]
```

Out[ ]=



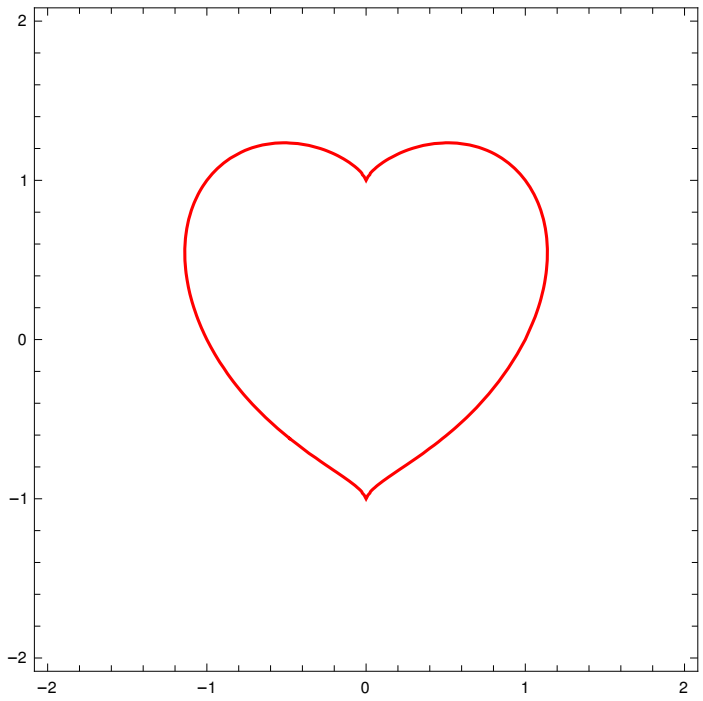
In[11]:=
```
ContourPlot[{x^2 + y^2 - 1 - (x^2)^(1/3) * y}, {x, -3, 3}, {y, -3, 3},
 BoxRatios → Automatic, ColorFunction → "Rainbow", ContourStyle → Black]
```

Out[11]=



In[13]:=
```
ContourPlot[x^2 + y^2 - 1 - (x^2)^(1/3) * y == 0, {x, -2, 2}, {y, -2, 2}]
```

Out[13]=

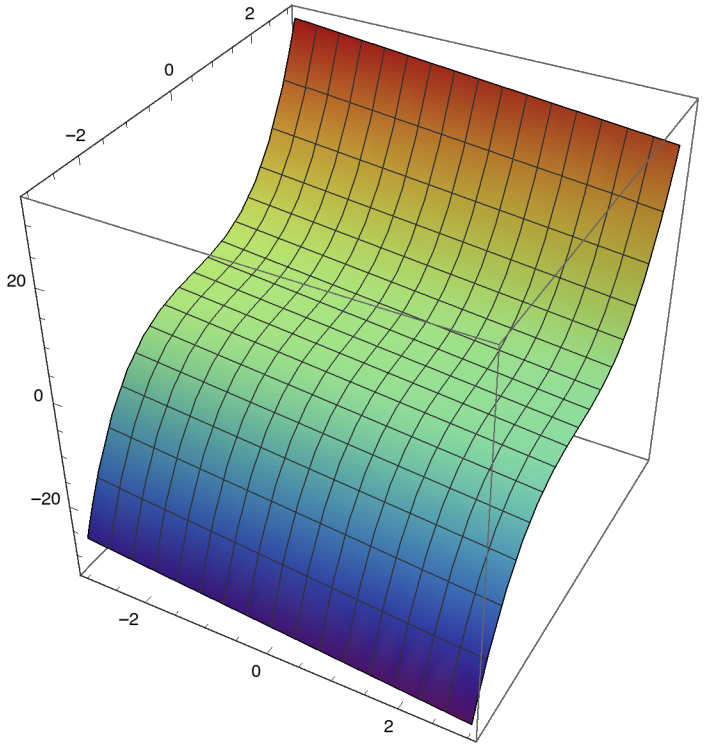



```
(* 1 *)
```

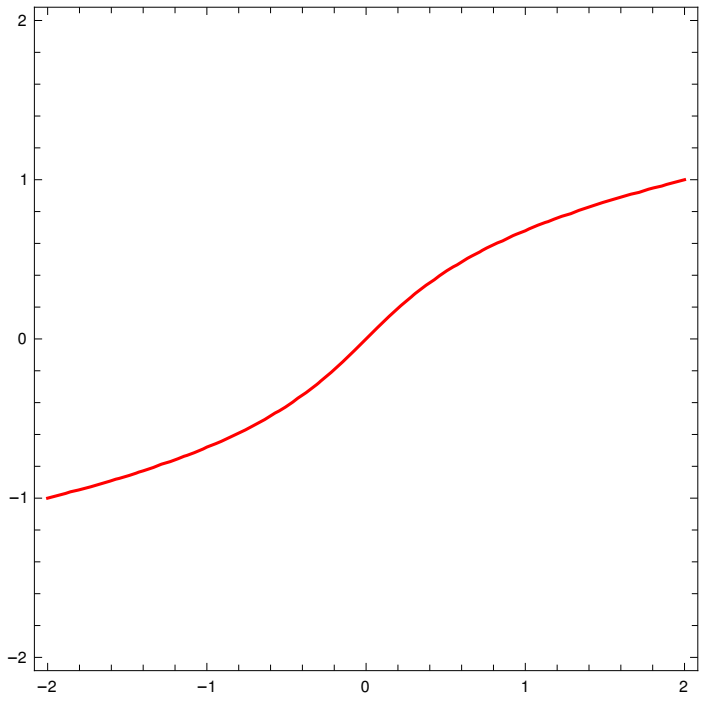
In[25]:=
```
f = y^3 + y - x
Plot3D[f, {x, -3, 3}, {y, -3, 3}, BoxRatios → {1, 1, 1}]
ContourPlot[f == 0, {x, -2, 2}, {y, -2, 2}]
```

Out[25]= $-x + y + y^3$

Out[26]=



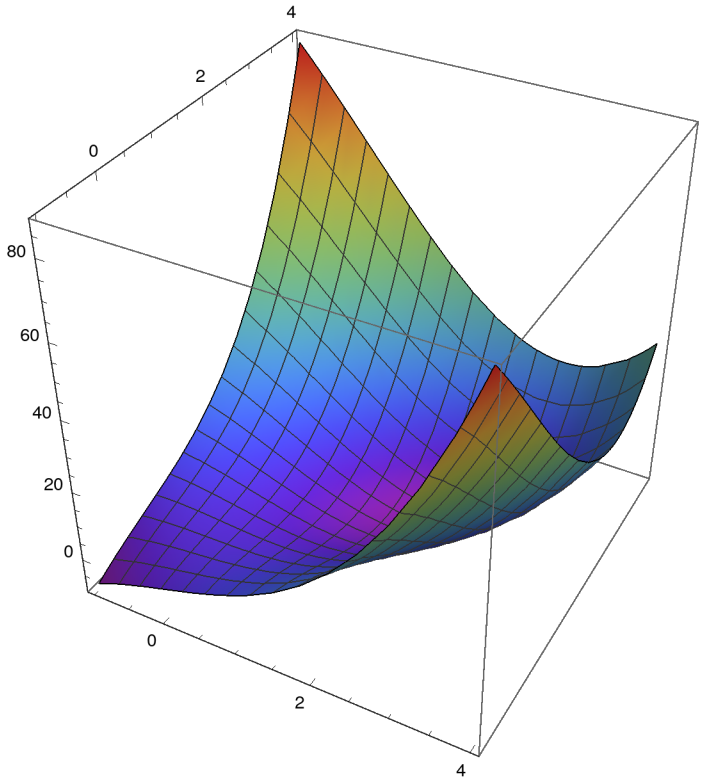
Out[27]=



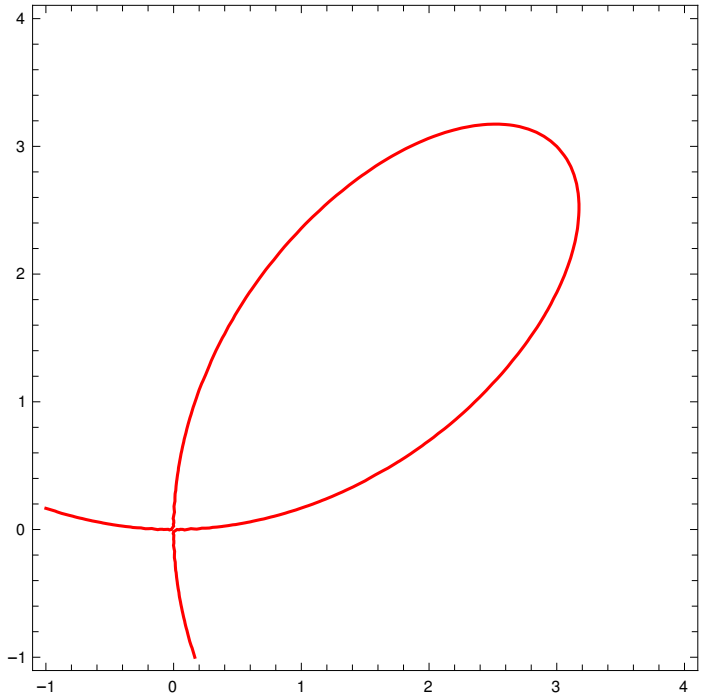
In[40]:=
```
f = x^3 + y^3 - 6 x * y
Plot3D[f, {x, -1, 4}, {y, -1, 4}, BoxRatios → {1, 1, 1}]
ContourPlot[f == 0, {x, -1, 4}, {y, -1, 4}]
```

Out[40]= $x^3 - 6\,x\,y + y^3$

Out[41]=



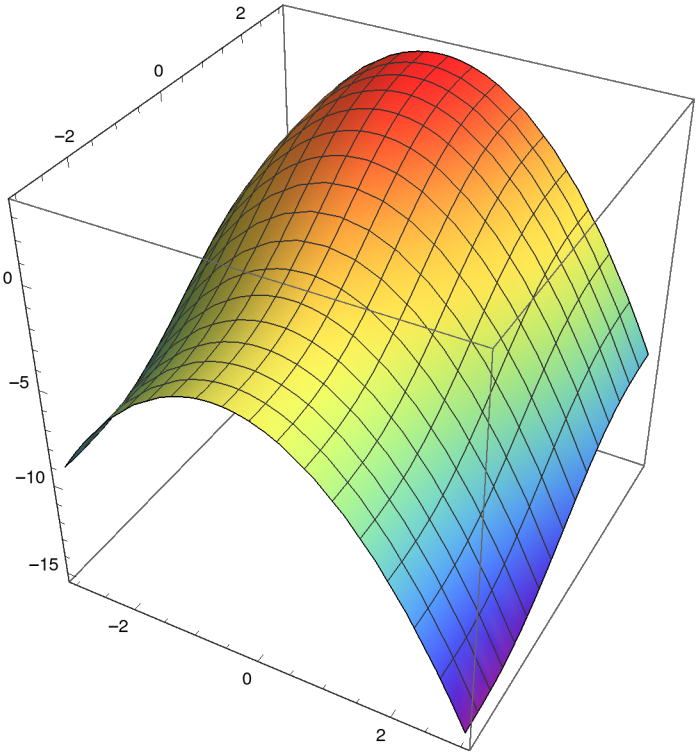
Out[42]=



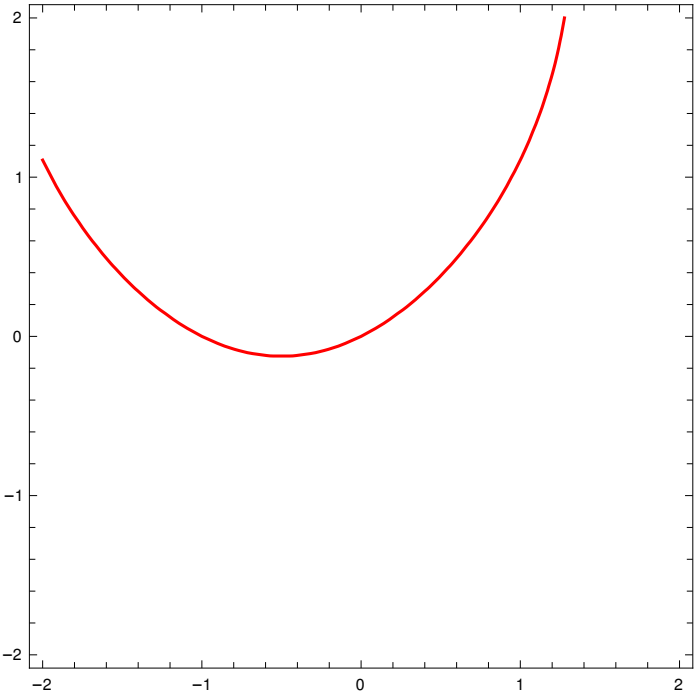
In[43]:=
```
f = y + Sin[y] - x^2 - x
Plot3D[f, {x, -3, 3}, {y, -3, 3}, BoxRatios → {1, 1, 1}]
ContourPlot[f == 0, {x, -2, 2}, {y, -2, 2}]
```

Out[43]= $-x - x^2 + y + \sin[y]$

Out[44]=



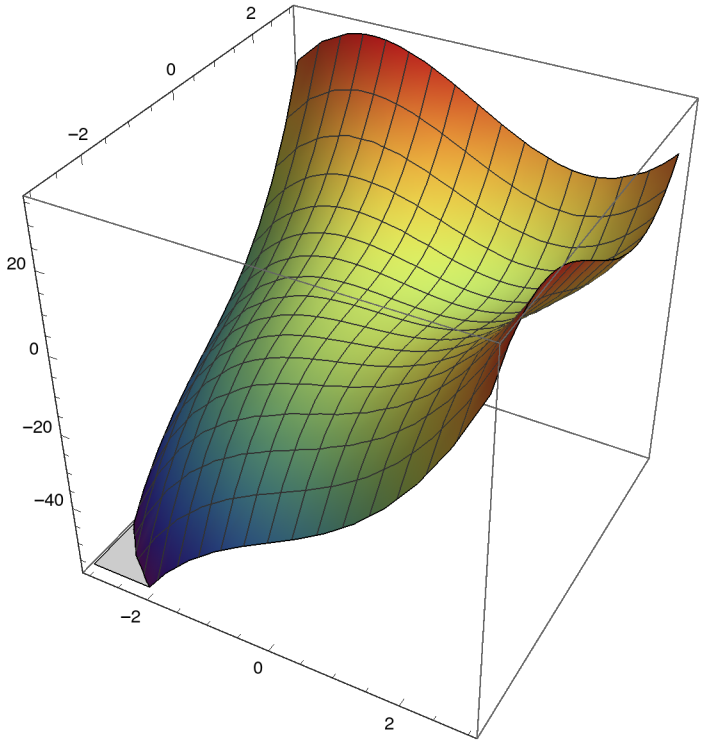
Out[45]=



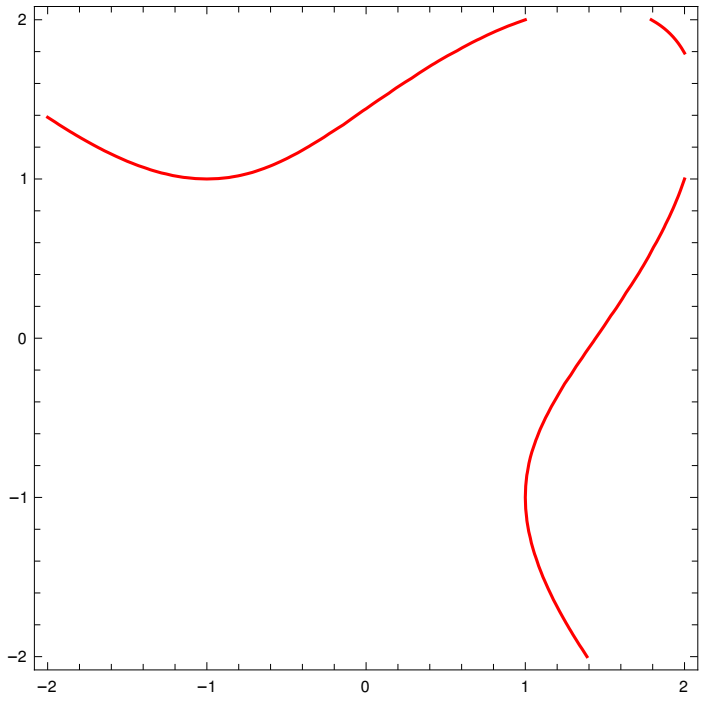
In[46]:=
```
f = y^3 + x^3 - 3 x * y - 3
Plot3D[f, {x, -3, 3}, {y, -3, 3}, BoxRatios → {1, 1, 1}]
ContourPlot[f == 0, {x, -2, 2}, {y, -2, 2}]
```

Out[46]= $-3 + x^3 - 3\,x\,y + y^3$

Out[47]=



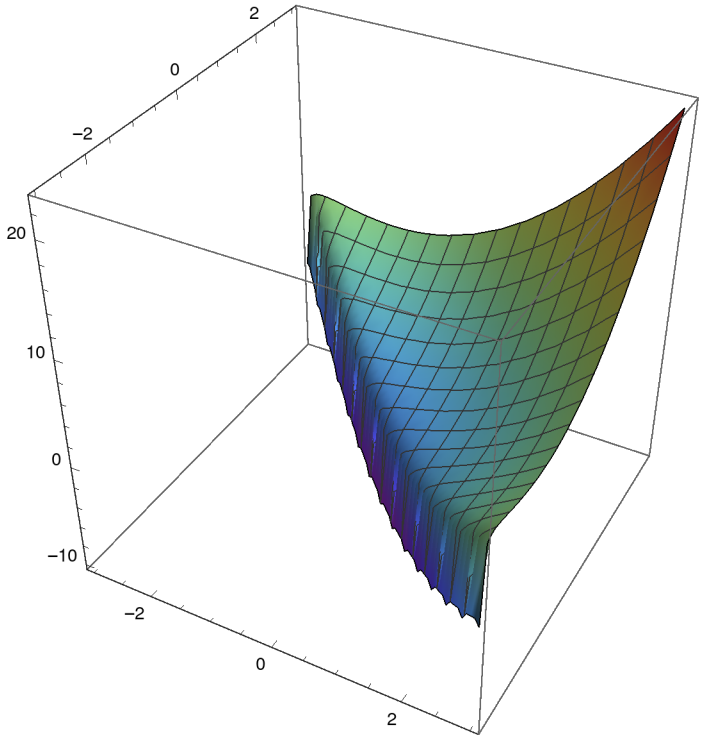
Out[48]=



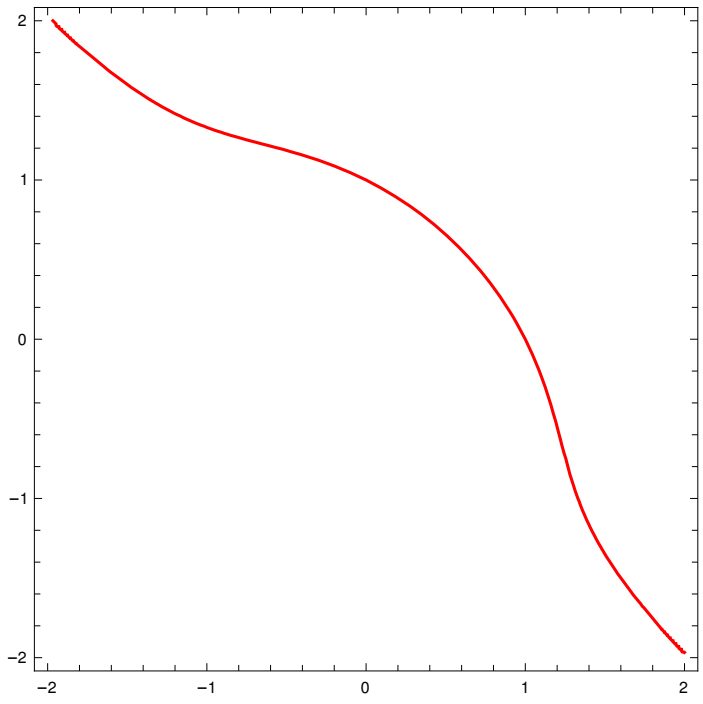
In[49]:=
```
f = Log[x + y] - x - y + x * y + x ^ 2 + y ^ 2
Plot3D[f, {x, -3, 3}, {y, -3, 3}, BoxRatios → {1, 1, 1}]
ContourPlot[f == 0, {x, -2, 2}, {y, -2, 2}]
```

Out[49]= $-x + x^2 - y + x\,y + y^2 + \text{Log}[x + y]$

Out[50]=



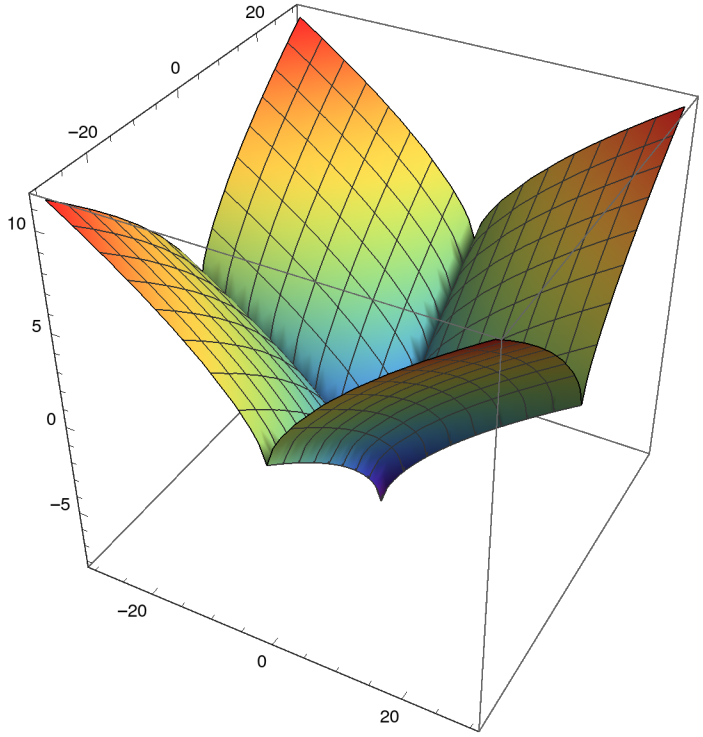
Out[51]=



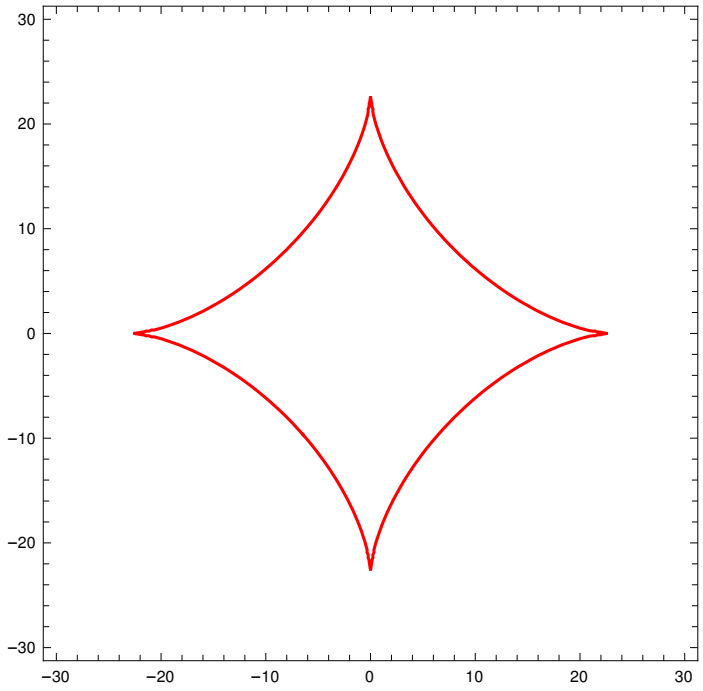
In[76]:=
```
f = (x^2)^(1/3) + (y^2)^(1/3) - 8
Plot3D[f, {x, -30, 30}, {y, -30, 30}, BoxRatios → {1, 1, 1}]
ContourPlot[f == 0, {x, -30, 30}, {y, -30, 30}]
```

Out[76]= $-8 + \left(x^2\right)^{1/3} + \left(y^2\right)^{1/3}$

Out[77]=



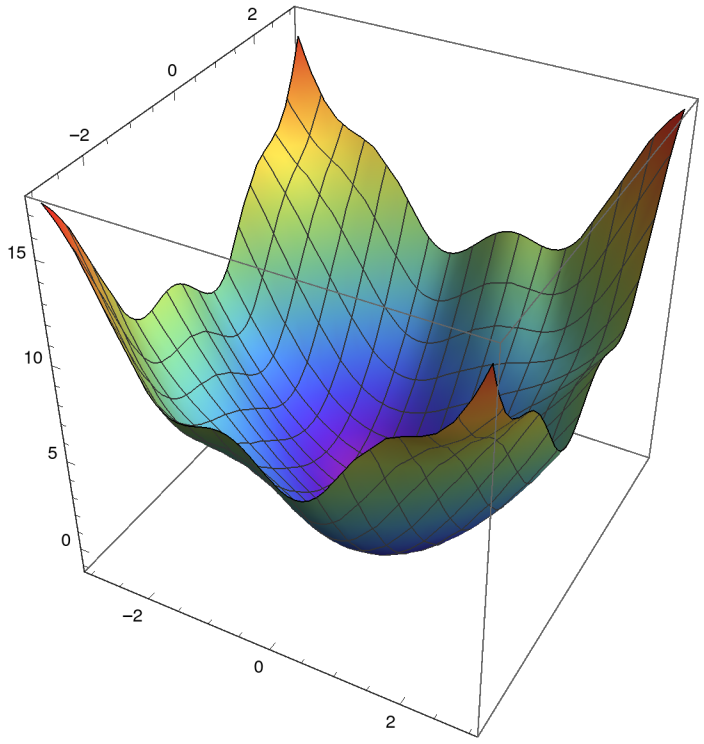
Out[78]=



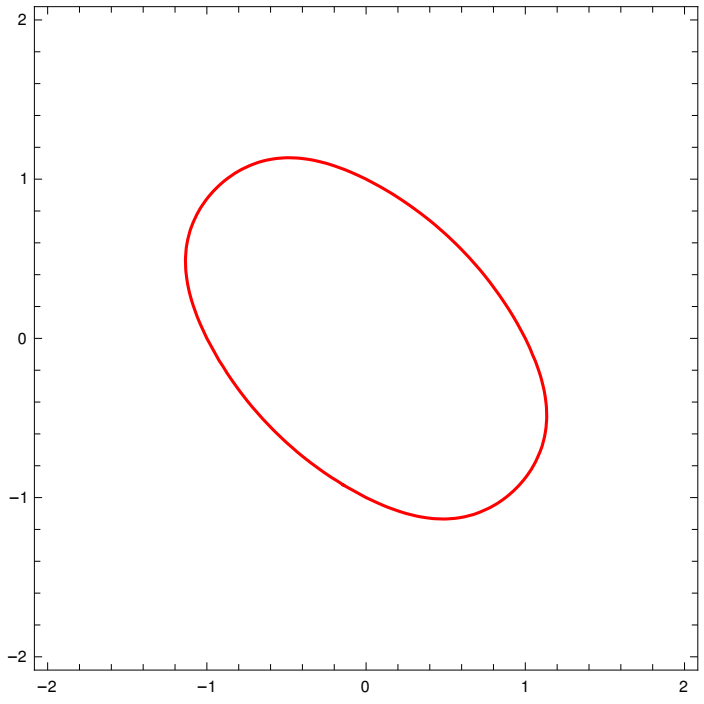
In[79]:=
```
f = Sin[x * y] + x^2 + y^2 - 1
Plot3D[f, {x, -3, 3}, {y, -3, 3}, BoxRatios → {1, 1, 1}]
ContourPlot[f == 0, {x, -2, 2}, {y, -2, 2}]
```

Out[79]= $-1 + x^2 + y^2 + \text{Sin}[x\ y]$

Out[80]=



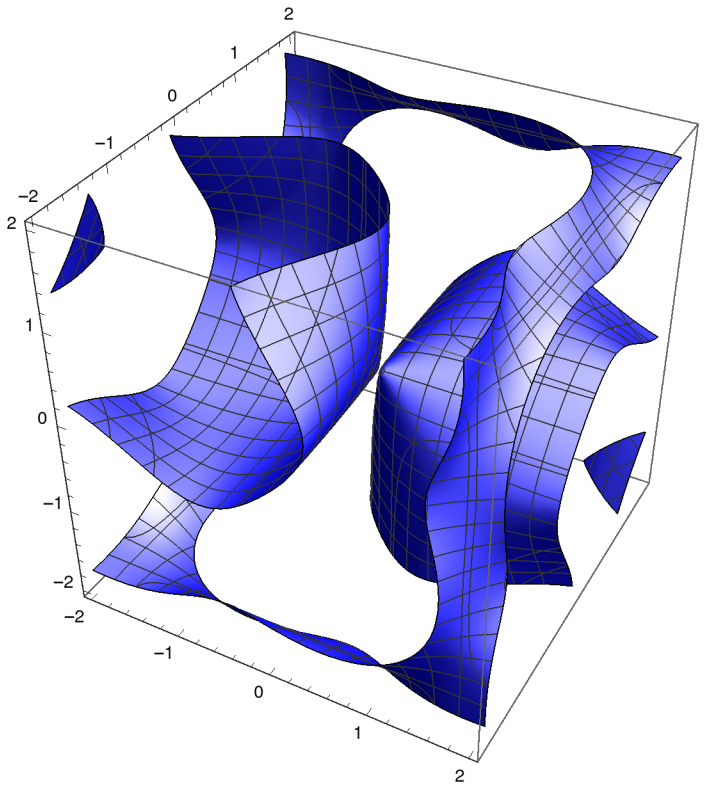
Out[81]=



In[118]:=
```
f = Sin[x * z] + Sin[y * z] - Sin[x * y]
ContourPlot3D[f == 0, {x, -2, 2}, {y, -2, 2}, {z, -2, 2}, ContourStyle → Directive[Blue]]
```

Out[118]=
$$-\text{Sin}[x\,y] + \text{Sin}[x\,z] + \text{Sin}[y\,z]$$

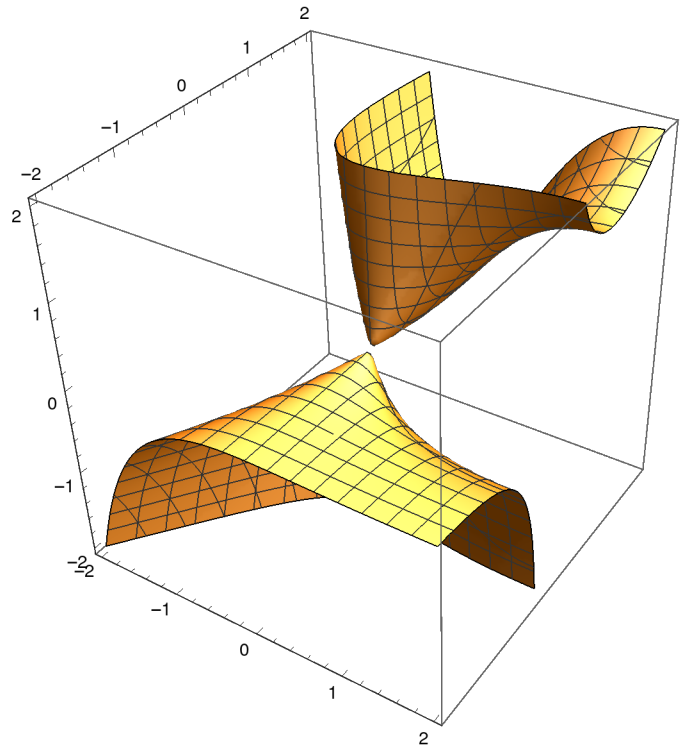
Out[119]=



In[123]:=
```
f = x^2 Exp[y] - y * z * Exp[x]
ContourPlot3D[f == 0, {x, -2, 2}, {y, -2, 2}, {z, -2, 2}, ContourStyle → Directive[Orange]]
```

Out[123]= $e^{y} x^{2} - e^{x} y z$

Out[124]=

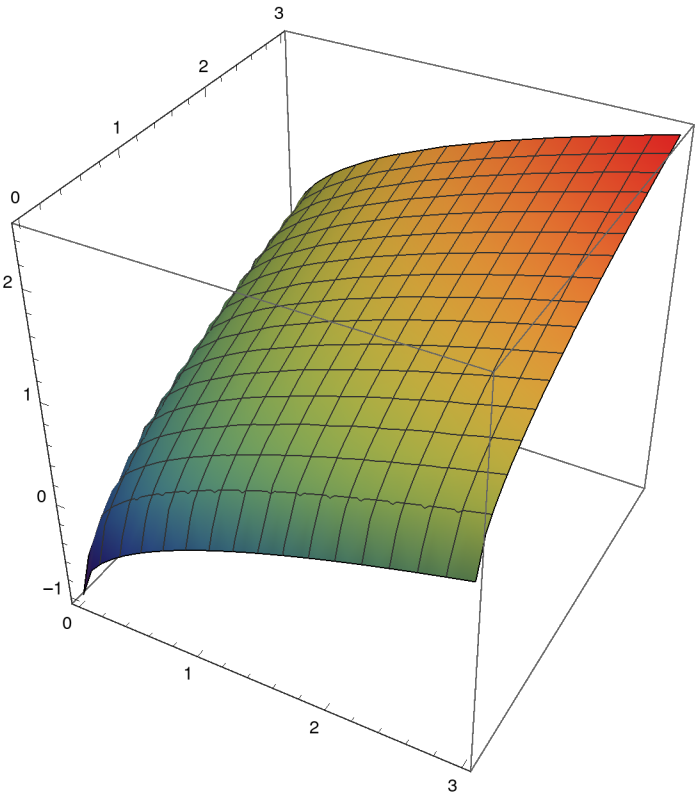



```
(*2*)
```

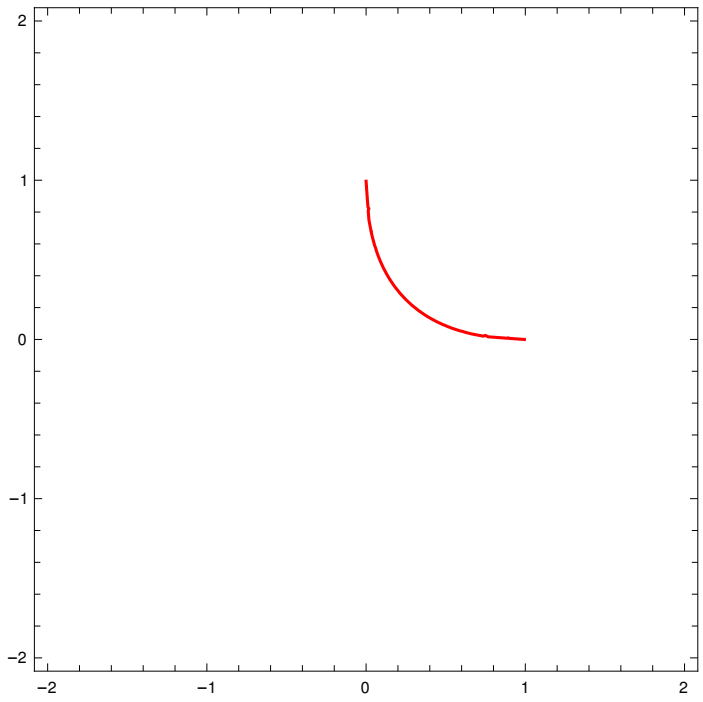
In[125]:=
```
f = Sqrt[x] + Sqrt[y] - 1
Plot3D[f, {x, -3, 3}, {y, -3, 3}, BoxRatios → {1, 1, 1}]
ContourPlot[f == 0, {x, -2, 2}, {y, -2, 2}]
```

Out[125]= $-1 + \sqrt{x} + \sqrt{y}$

Out[126]=



Out[127]=

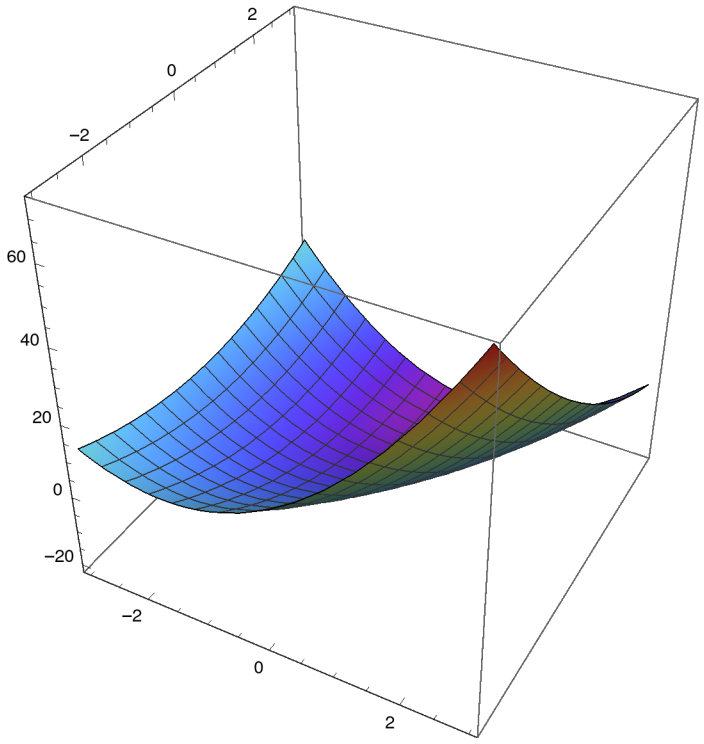


(*3*)

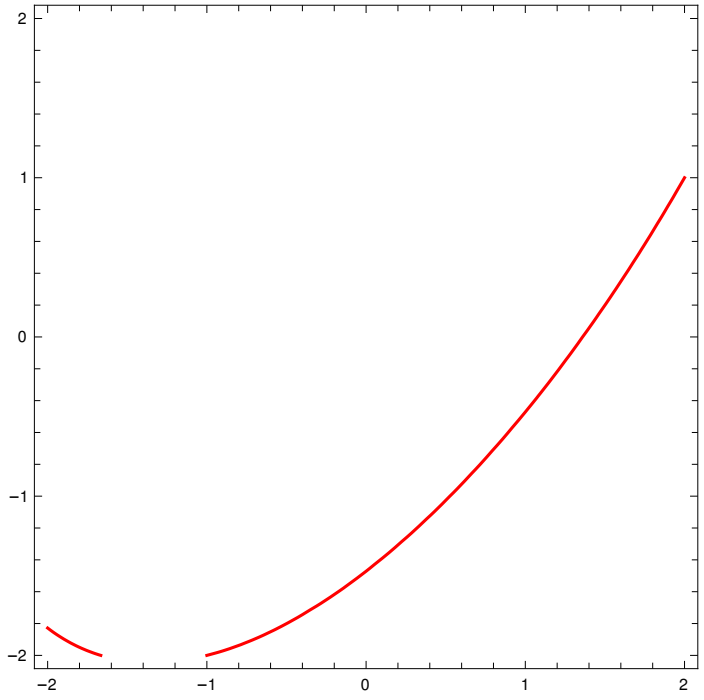
In[128]:=
```
f = 3 x^2 - 2 x * y + y^2 + 4 x - 6 y - 11
Plot3D[f, {x, -3, 3}, {y, -3, 3}, BoxRatios → {1, 1, 1}]
ContourPlot[f == 0, {x, -2, 2}, {y, -2, 2}]
```

Out[128]= $-11 + 4x + 3x^2 - 6y - 2xy + y^2$

Out[129]=



Out[130]=

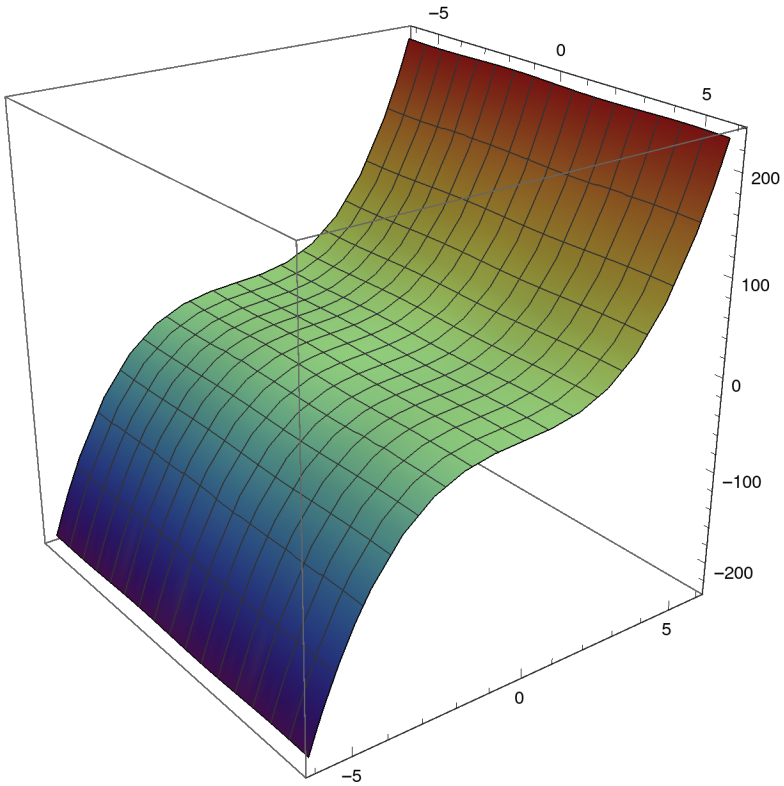


(*4*)

In[143]:=
```
f = y ^ 3 + 2 y - Sin[x] + 3
Plot3D[f, {x, -6, 6}, {y, -6, 6}, BoxRatios → {1, 1, 1}]
ContourPlot[f == 0, {x, -2, 2}, {y, -2, 2}]
```

Out[143]= $3 + 2\,y + y^3 - \text{Sin}[x]$

Out[144]=



Out[145]=