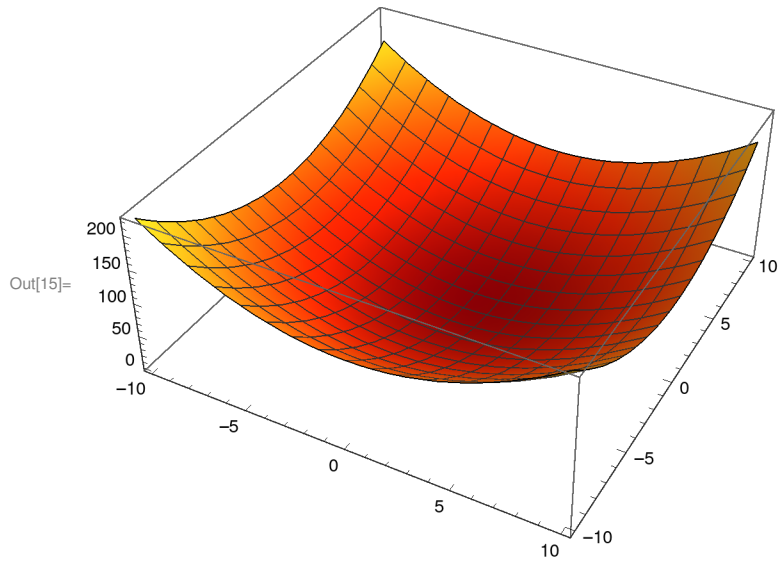In[16]:= `SetOptions[Plot3D(*Or whichever plot you desire*),`
    `ColorFunction → "Rainbow"(*One of many options*)];`

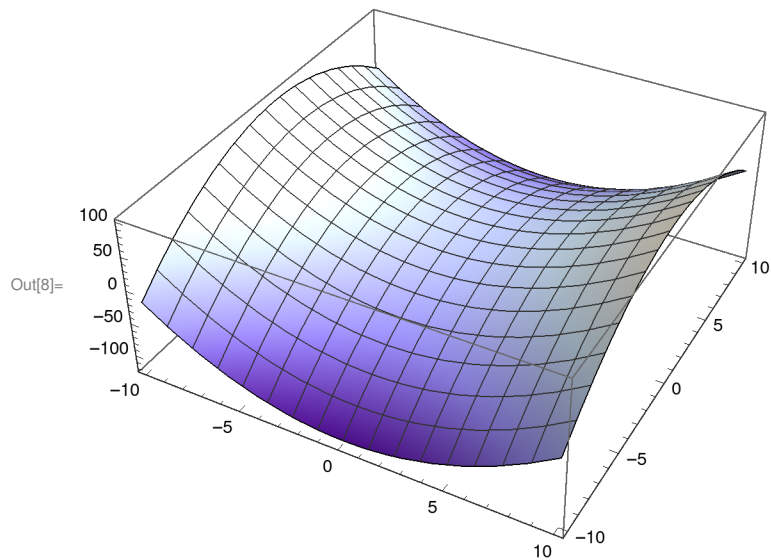
(8 a)

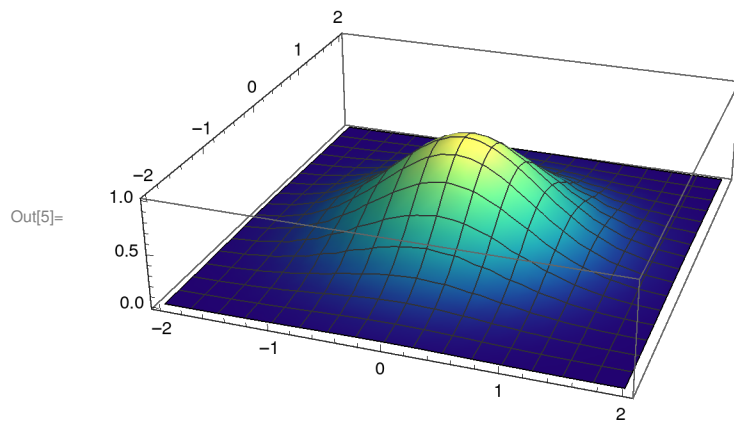In[15]:= `Plot3D[x^2+(y-1)^2, {x, -10, 10}, {y, -10, 10}, ColorFunction → "SolarColors"]`

Out[15]=

(8 b)

In[8]:= `Plot3D[x^2-(y-1)^2, {x, -10, 10}, {y, -10, 10}, ColorFunction → "LakeColors"]`
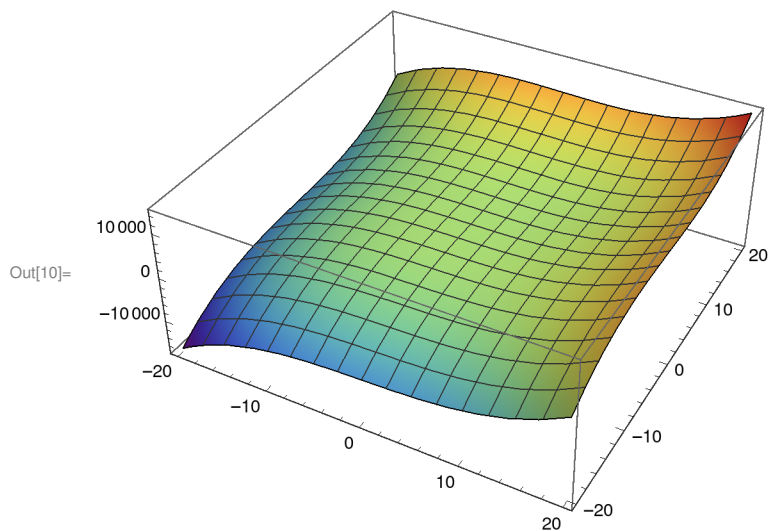
Out[8]=

(8 c)

In[5]:= `Plot3D[Exp[-x^2 - y^2], {x, -2, 2}, {y, -2, 2},`
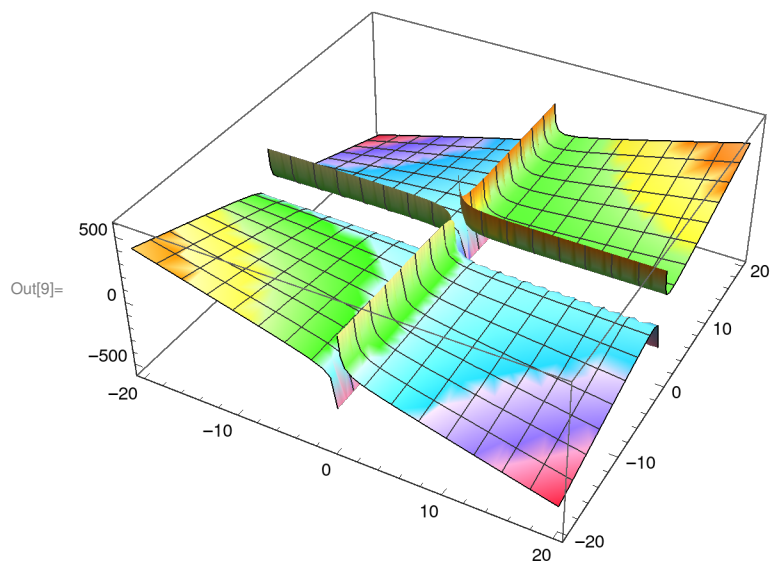`    BoxRatios → Automatic, ColorFunction → "BlueGreenYellow"]`

Out[5]=

(8 d)

In[10]:= `Plot3D[x^3 + y^3 - 3 x * y, {x, -20, 20}, {y, -20, 20}, ColorFunction → "Rainbow"]`
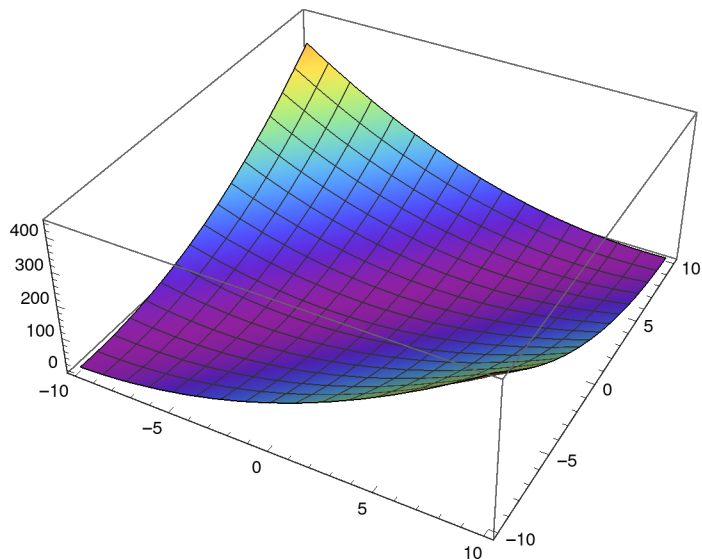
Out[10]=

(8 e)

In[9]:= `Plot3D[x * y + 50 / x + 50 / y, {x, -20, 20}, {y, -20, 20}, ColorFunction → "BrightBands"]`

Out[9]=

(8 f)

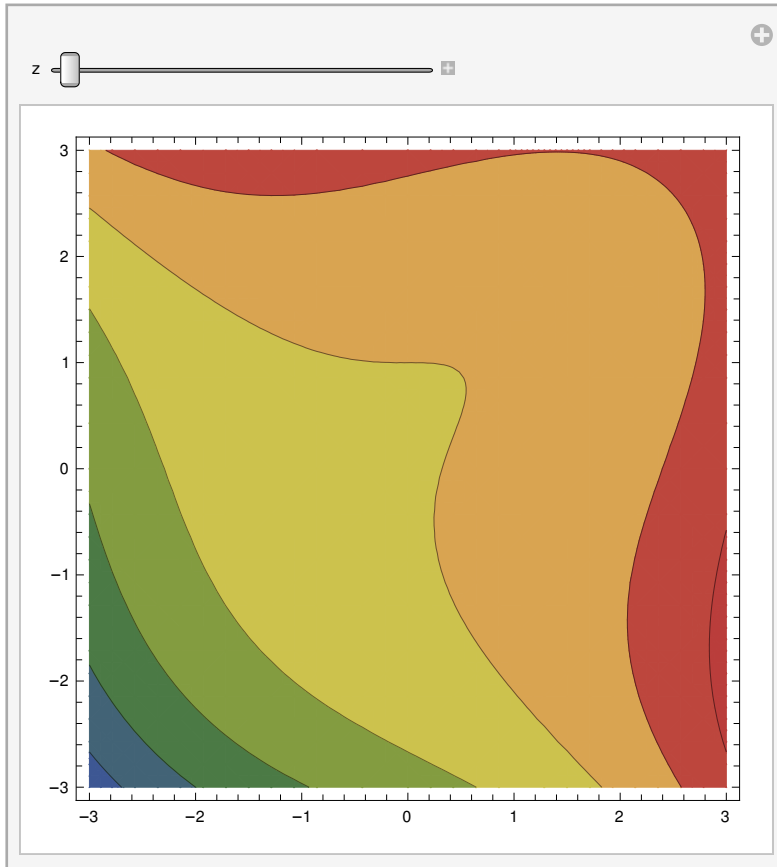`Manipulate[ContourPlot[x^2 + y^3 + z^4,`
`   {x, -1, 1}, {y, -1, 1}, ColorFunction → "DarkRainbow"], {z, -1, 1}]`
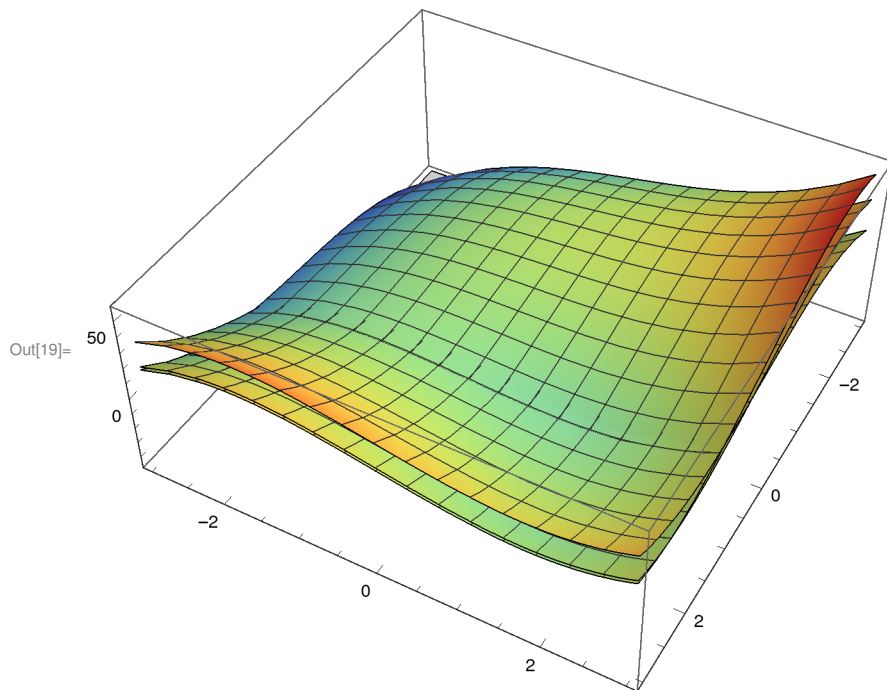

(8 g)

In[13]:= `Manipulate[ContourPlot[x^3 + y^3 + z^3 - 3 (x*y + x*z),`
`{x, -3, 3}, {y, -3, 3}, ColorFunction → "DarkRainbow"], {z, -1, 1}]`

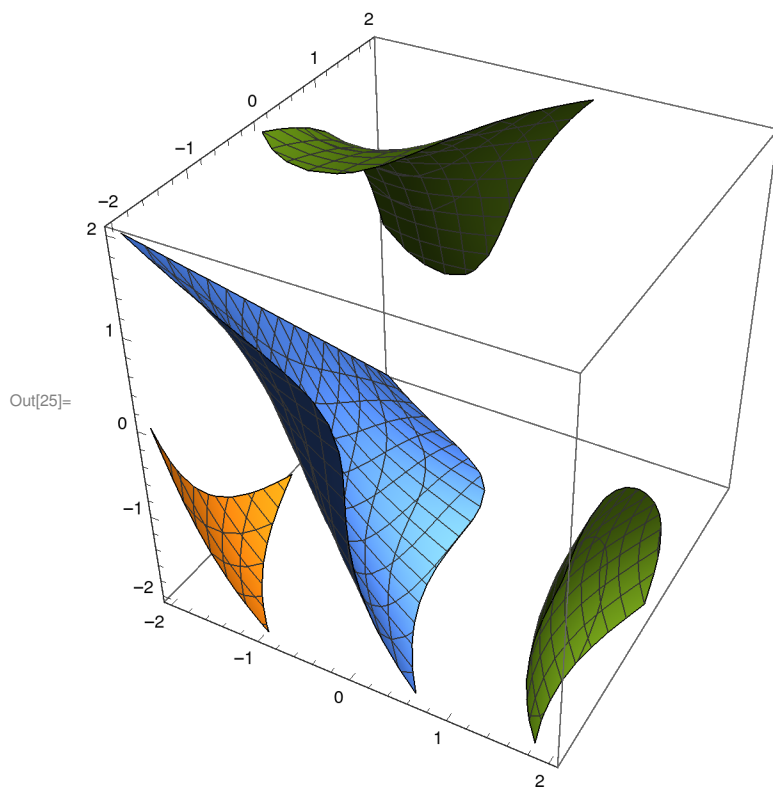Out[13]=

In[19]:= `Plot3D[Evaluate@Table[x^3+y^3+z^3-3(x*y+x*z), {z, {-1, 1, 2}}],`
`{x, -3, 3}, {y, -3, 3}, PlotStyle → {Red, Green, Blue}]`

Out[19]=

In[25]:= `ContourPlot3D[x^3+y^3+z^3-3(x*y+x*z), {x, -2, 2}, {y, -2, 2}, {z, -2, 2}]`

Out[25]=

In[32]:= `Outer[Function[{z, y, x},`
`If[x > 0 && y > 0 && z > 0, 0, Rescale[x^3 + y^3 + z^3 - 3 (x * y + x * z), valueInterval]]],`
`Reverse@#, Reverse@#, #] &@Range[-1, 1, .02] //`
`Image3D[#, ColorFunction → "RainbowOpacity", Boxed → True, Axes → True,`
`AxesLabel → (ToBoxes[Style[#, 20]] & /@ {x, y, z})] &`

Out[32]=