In[65]:=
```
f = x + y + 1 / (x * (y + 1) ^ 2)
```

Out[65]=
$$x + y + \frac{1}{x\,(1+y)^2}$$

In[66]:=
```
gradijent = D[f, {{x, y}}]
```

Out[66]=
$$\left\{1 - \frac{1}{x^2\,(1+y)^2},\ 1 - \frac{2}{x\,(1+y)^3}\right\}$$

In[67]:=
```
Tacke = Solve[gradijent == 0, {x, y}]
```

Out[67]=
$$\left\{\left\{x \to -\frac{1}{\sqrt{2}},\ y \to -1 - \sqrt{2}\right\},\ \left\{x \to -\frac{i}{\sqrt{2}},\ y \to -1 - i\sqrt{2}\right\},\right.$$
$$\left.\left\{x \to \frac{i}{\sqrt{2}},\ y \to -1 + i\sqrt{2}\right\},\ \left\{x \to \frac{1}{\sqrt{2}},\ y \to -1 + \sqrt{2}\right\}\right\}$$

In[68]:=
```
Hodf = Simplify[D[f, {{x, y}, 2}]]
```

Out[68]=
$$\left\{\left\{\frac{2}{x^3\,(1+y)^2},\ \frac{2}{x^2\,(1+y)^3}\right\},\ \left\{\frac{2}{x^2\,(1+y)^3},\ \frac{6}{x\,(1+y)^4}\right\}\right\}$$

In[69]:=
```
HodfM = MatrixForm[Hodf]
```

Out[69]//MatrixForm=
$$\begin{pmatrix} \frac{2}{x^3\,(1+y)^2} & \frac{2}{x^2\,(1+y)^3} \\ \frac{2}{x^2\,(1+y)^3} & \frac{6}{x\,(1+y)^4} \end{pmatrix}$$

In[70]:=
```
HodfuTacke = Hodf  /. Tacke
```

Out[70]=
$$\left\{\left\{\left\{-2\sqrt{2},\ -\sqrt{2}\right\},\ \left\{-\sqrt{2},\ -\frac{3}{\sqrt{2}}\right\}\right\},\ \left\{\left\{2i\sqrt{2},\ i\sqrt{2}\right\},\ \left\{i\sqrt{2},\ \frac{3i}{\sqrt{2}}\right\}\right\},\right.$$
$$\left.\left\{\left\{-2i\sqrt{2},\ -i\sqrt{2}\right\},\ \left\{-i\sqrt{2},\ -\frac{3i}{\sqrt{2}}\right\}\right\},\ \left\{\left\{2\sqrt{2},\ \sqrt{2}\right\},\ \left\{\sqrt{2},\ \frac{3}{\sqrt{2}}\right\}\right\}\right\}$$

In[71]:=
```
minf = Map[PositiveDefiniteMatrixQ, HodfuTacke, 1]
```

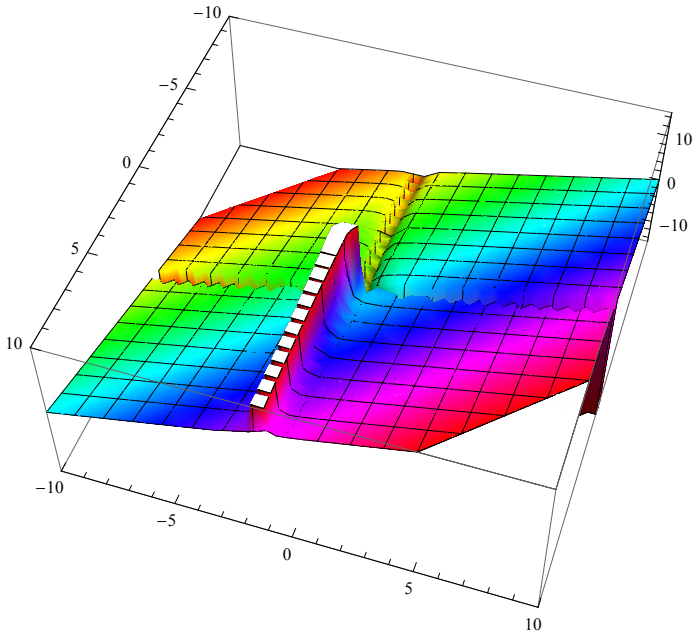
Out[71]=
```
{False, False, False, True}
```

In[72]:=
```
maxf = Map[PositiveDefiniteMatrixQ, -HodfuTacke, 1]
```

Out[72]=
```
{True, False, False, False}
```

In[76]:=
```
Plot3D[f, {x, -10, 10}, {y, -10, 10}, ColorFunction → Hue,
 PlotRange → {{-10, 10}, {-10, 10}, {-15, 15}}]
```

Out[76]=



In[77]:=
```
Show[%76, ImageSize → Full]
```

Out[77]=