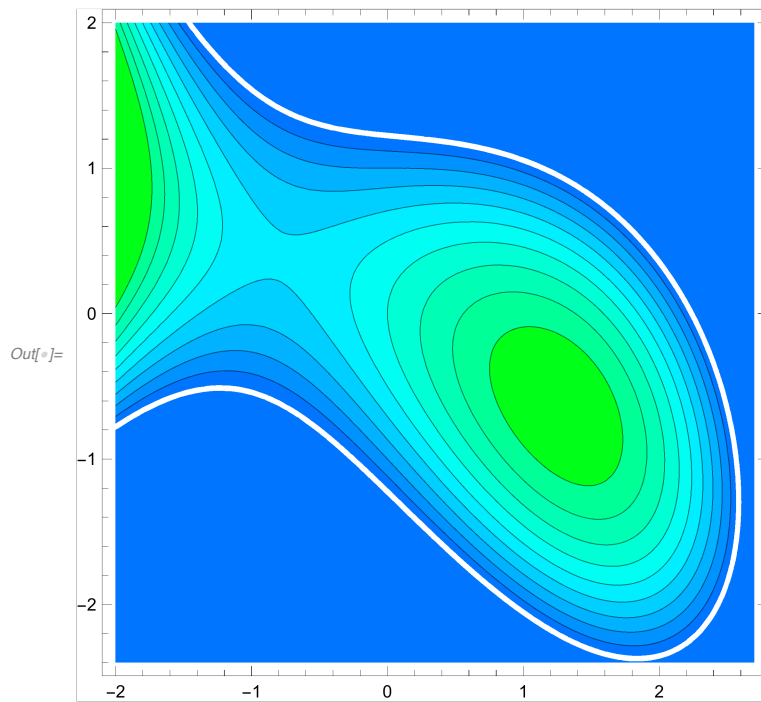


In[*]:= $f[x_, y_] := \text{Max}\left[-x^3/3 - xy - y^2 + x + \frac{3}{2}, 0\right]$
[maximum]

$\text{foo}[x_, y_] := -x^3/3 - xy - y^2 + x + \frac{3}{2}$

In[*]:= **relief** = **ContourPlot**[f[x, y], {x, -2, 2.7}, {y, -2.4, 2},
[tracé de champ scalaire par ses contours]

Contours → **Table**[k/4, {k, 0, 9}], **ColorFunction** → **Function**[z, Hue[.6 - z/4]]]
[contours] [table] [fonction de couleur] [fonction] [teinte]



In[*]:= **grad** = {D[foo[x, y], x], D[foo[x, y], y]}
[dérivée d] [dérivée d]

Out[*]:= {1 - x² - y, -x - 2 y}

In[*]:= **candidats** = {x, y} /. **Solve**[{foo[x, y] == 1.0, 1 - x² - y == 0}, {x, y}] // **N** // **Chop**
[résous] [valeur] [remplace]

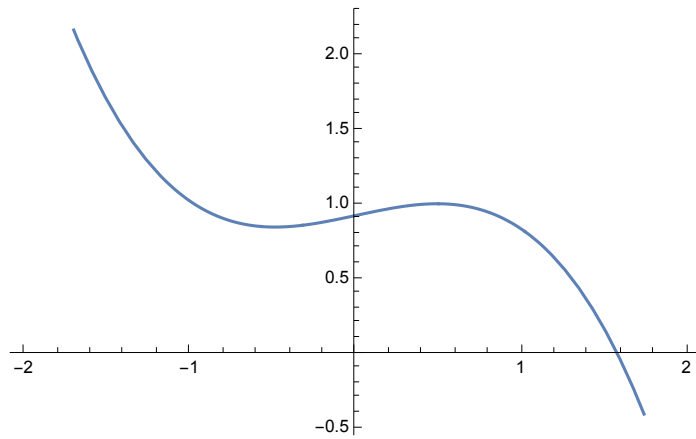
Solve: Solve was unable to solve the system with inexact coefficients. The answer was obtained by solving a corresponding exact system and numericizing the result.

Out[*]:= {{-0.872795, 0.238228}, {-0.677486, 0.541013},
 {0.4895, 0.76039}, {1.72745, -1.98408}}

```
Plot[foo[x, 0.76039], {x, -2, 2}]
```

[\[tracé de courbes\]](#)

Out[]:=



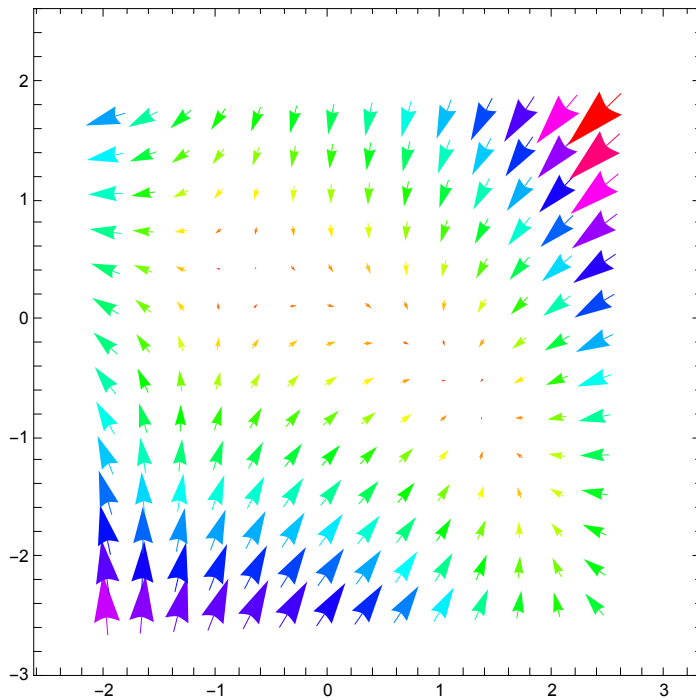
```
In[ ]:= champ = VectorPlot[grad, {x, -2, 2.7},
```

[\[trace vectorielle\]](#)

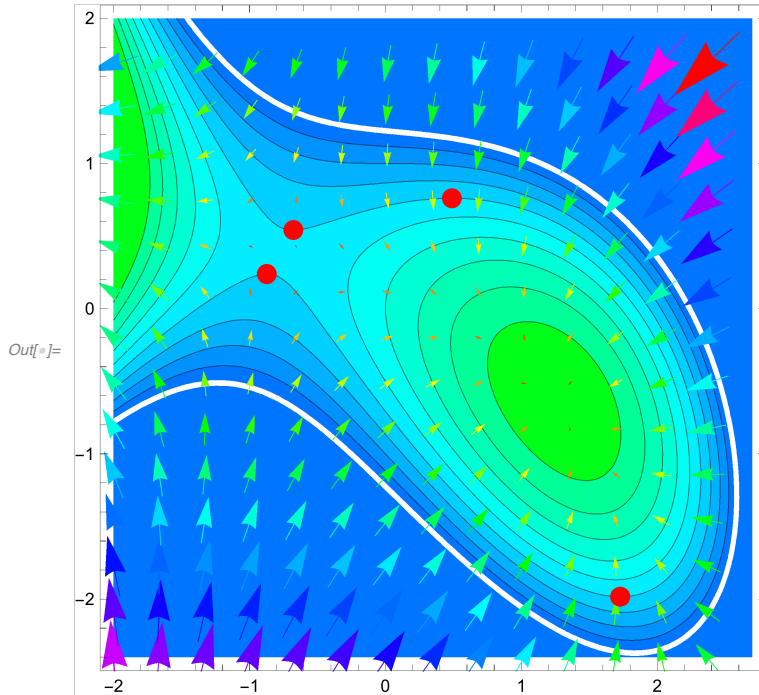
```
{y, -2.4, 2}, VectorScale -> Large, VectorColorFunction -> Hue]
```

[\[échelle de vecteur\]](#) [\[taille g...](#) [\[fonction de couleur de vecteur\]](#) [\[teinte\]](#)

Out[]:=



```
In[ ]:= Show[relief, champ, Graphics[PointSize[.03], Red, Point/@ candidats]]
[montre [graphique [taille des points [rouge point
```



```
In[ ]:= foo[1, 0]
```

13

```
Out[ ]:= 13/6
```

```
In[ ]:= grad /. {x -> 1, y -> 0}
```

```
Out[ ]:= {0, -1}
```

```
In[ ]:= Ptgt = (foo[1, 0] + {0, -1} . {x - 1, y - 0})
```

13

```
Out[ ]:= 13/6 - y
```

```
In[ ]:= vecteur = Graphics3D[
[graphique 3d
```

```
{Red, Arrowheads[0.1], Arrow[Tube[{{1, 0, 13/6}, {1, .85, 13/6 - .85}}, .03]]];
[rouge [têtes de flèche [flèche [tube
```

```
In[ ]:= Plot3D[ $\left\{\frac{13}{6} - y, \text{foo}[x, y]\right\}$ , {x, .0, 2}, {y, -.9, .9}, AspectRatio → 1,  
[tracé de surfaces  
PlotStyle → {{Blue, Opacity[.5]}, Green}, AxesLabel → {"x", "y"}];  
[style de tracé [bleu [opacité [vert [titre d'axe  
Show[%, vecteur]  
[montre
```

