```
clc
clear all
close all
syms x y lam
f=x^2+2*y^2
g=x^2+y^2-1
gradf=gradient(f,[x,y])
gradg=gradient(g,[x,y])
lagr=gradf-lam*gradg
[lamsol,xsol,ysol]=solve(lagr(1),lagr(2),g);
double([xsol,ysol,lamsol]);
real(double([xsol,ysol,lamsol]))
hfun=inline(vectorize(f))
values=real(double(hfun(xsol,ysol)))
```

```
f =

x^2 + 2*y^2


g =

x^2 + y^2 - 1


gradf =

2*x
4*y


gradg =

2*x
2*y


lagr =

2*x - 2*lam*x
4*y - 2*lam*y


ans =

    -1     0     1
     1     0     1
     0    -1     2
     0     1     2


hfun =

     Inline function:
```

```
    hfun(x,y) = x.^2 + 2.*y.^2
```

```
values =

     1
     1
     2
     2
```

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