24BMH1112

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GRADIENT VECTOR FIELD

```
clc
clear all
close all
syms x y
f=input('enter the function f(x,y):');
F = gradient(f)
P = inline(vectorize(F(1)), 'x', 'y');
Q = inline(vectorize(F(2)), 'x','y');
x = linspace(-2, 2, 10);
y = x;
[X,Y] = meshgrid(x,y); U = P(X,Y);
V = Q(X,Y);
quiver(X,Y,U,V,1)
axis on
xlabel('x')
ylabel('y')
hold on
ezcontour(f,[-2 2])
```

```
Command Window
enter the function f(x,y):
x^2*y-y^3

F =

     2*x*y
x^2 - 3*y^2

>>
```