% this defines a grid in the x-y plane
[x,y] = meshgrid(v);
u=x.^2; % this is the x component of your vector function
p=3*x.*y.^2; % this is the y component of your vector function

[px,py]=curl(x,y,u,p); % this takes the curl and stores it in a vector with components px and py
figure(1)
quiver(x,y,u,p); % this plots a vector field (your original function)
figure(2)
quiver(v,v,px,py,'r'); % this plots the vector field which is the curl of your original function