```matlab
'04'

clc
clear all
syms x y
a=2;
phi=a*x^3/3-a*x*y^2-2
u=diff(phi,x);v=diff(phi,y);
u
v
chi=int(u,y);
g1=-v-diff(chi,x);
chi=chi+int(g1,x)

for i=1:40
    ezplot(phi==i,[0,6,0,6])
    hold on
end
for i=1:40
    h=ezplot(chi==i,[0,6,0,6]);
    set(h,'color','red')
    hold on
end
hold off
[x,y]=meshgrid(0:6,0:6);
streamslice(x,y,subs(u),subs(v))
gtext('Stream function')
gtext('Velocity potential')
gtext('Stream slice')


%%%%%%%%%%Output%%%%%%%%%%%


        ans =

        04


        phi =

        (2*x^3)/3 - 2*x*y^2 - 2


        u =

        2*x^2 - 2*y^2


        v =

        -4*x*y
```

```
chi =

2*y*x^2 - (2*y^3)/3
```

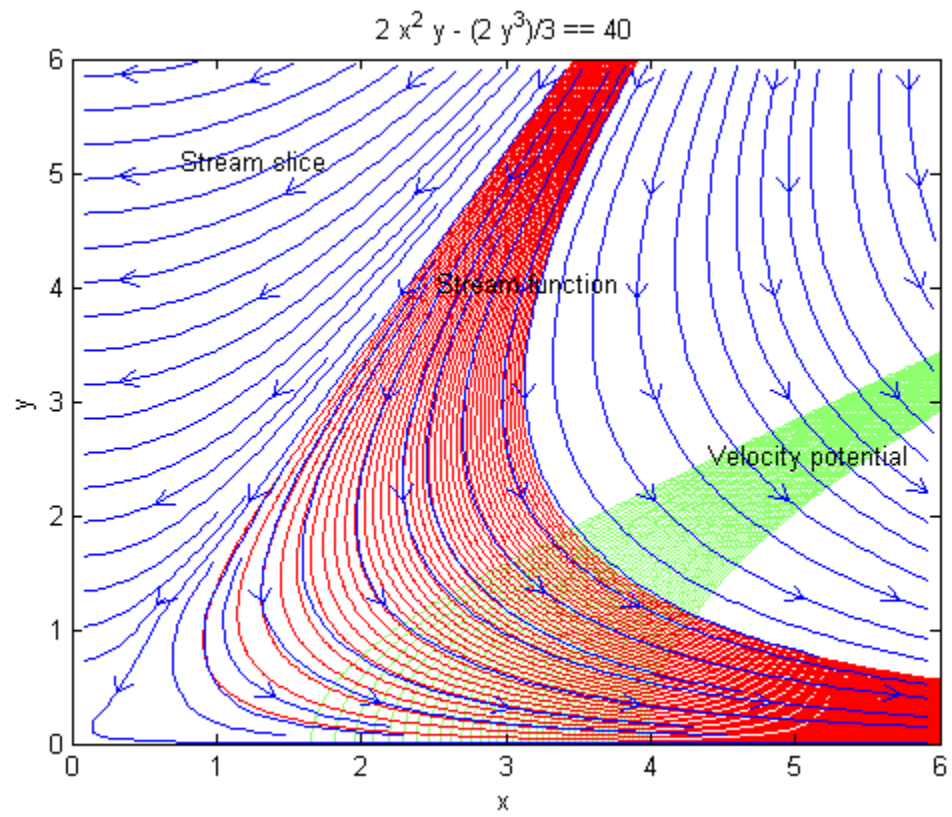$2 x^2 y - (2 y^3)/3 == 40$

Published with MATLAB® R2013a