CSE 232- Numerical Analysis Laboritory
Lab 2

%To view plots after 'plot' (and other plot-producing commands) this command must follow: 'print -dpng some_unique_plot_name.png;'
%It exports current plot to png image which then is sent to your browser
%GNU Octave 4.0.0

http://www.compileonline.com/execute_matlab_online.php

1. Run this program.

```
clear all
x=linspace(-5,5);
y= x./(x.^2+4);
plot(x,y)
% plot(x,y,'.r')
% plot(x,y,'--r')
% plot(x,y,'--r','LineWidth', 2)
% grid on
% axis([-10, 10, -.5, .5])
% xlabel('x')
% ylabel('f(x)')
% title('f(x)= x/(x^2+4)')
print -dpng figure.png
```

2. Work with two parameter family function $f(x)=e^{(-(x-a)^2/b)}$

```
clear all
close all
x=linspace(-5,5);

% set b = 1 and use different value of a
% when a = 1
y1 = exp(-(x-1).^2);

% when a = 0
y2 = exp(-(x).^2);

%when a = -1
y3 = exp(-(x+1).^2);

subplot(1,2,1) % one by two sub plot working in one
plot(x,y1,x,y2,x,y3)
axis([-4,4, -.2,1.2])
grid on
legend('a=1', 'a=0','a=-1')
title('b=1, different values of a')
```

```
set(gca,'XTick',-4:1:4)
set(gca,'YTick',-.2:.1:1.5)

% set a=0 use diff values of b
subplot(1,2,2)

%b = 1
y4 = exp(-(x).^2/1);

%b = 3
y5 = exp(-(x).^2/3);

%b = 1/3
y6 = exp(-(x).^2/(1/3));

plot(x,y4,'--b',x,y5,'--r',x,y6,'--g')
legend('b=1', 'b=3','b=1/3','Location','Best')
title('set a=0, different values of b')
grid on

print -dpng figure.png
```

3. Easy plot graph

```
ezplot('sin(x)','cos(x)')
print -dpng figure.png
```

4. ploting function of two variables.

```
clear all

x=linspace(-5,5);
y= x=linspace(-5,5);
[x,y] = meshgrid(x,y);
z= x.^2+y.^2;
mesh(x,y,z)
print -dpng figure.png
```

5. root of a polinomials $f(x)=x^3+22x^2+15x-6$

```
%f(x) = x.^3+22x.^2+15x-6

roots([1 22 15 -6])
```

6. Rational function plot $f(x)=\frac{x}{(x-3)}, f(x)=\frac{1}{x}$

```
clear all
x=linspace(-5,5);
```

```
y = x./(x-3);
plot(x,y);
grid on
print -dpng figure.png
```