# Plotting graphs in OCTAVE
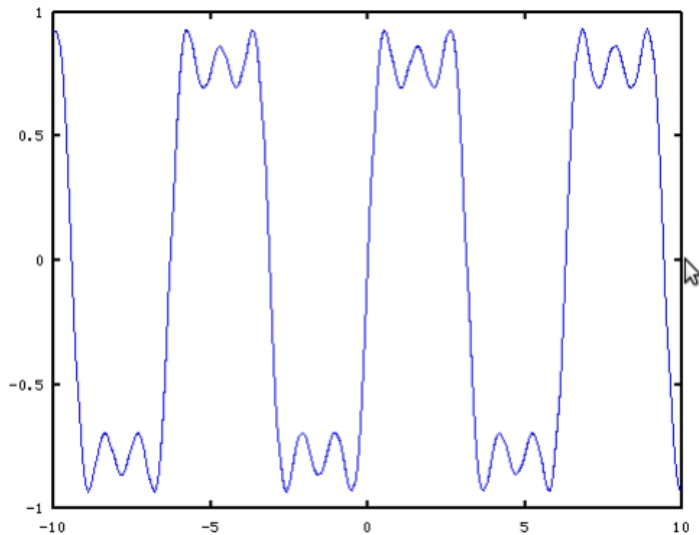
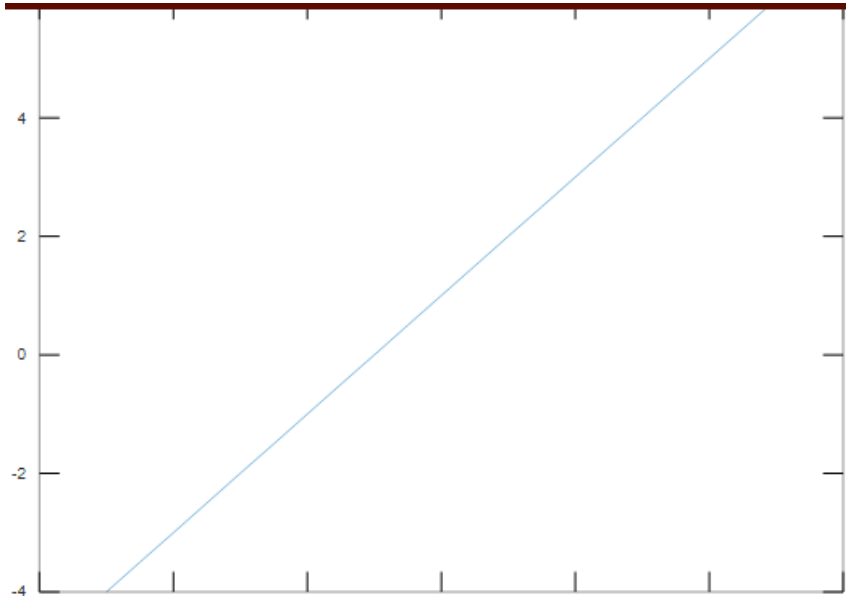**Example.**

**x=-10:0.1:10;**   %Forming limits of x.

**y=cos(x/2)+cos(5\*x)/5;** % Forming limits of y.

**plot(x,y)** %Plotting a graph of this function.



<span style="color:red">octave:6></span>



**TASKS: Plot graphs**

1) $y = 3x - x^3, x \in [-2,3]$,

2) $y = \dfrac{4x^2 + 6x}{x^2 + 4x + 5}, x \in [-2,1]$,

**3)** $y = x^4 - 2x^2 + 3, x \in [-3,2]$,

**4)** $y = \dfrac{x^2 + 3}{x^2 + 2x + 5}, x \in [-1,3]$,

## A derivative

**subs**(variable)

**differentiate**(expression)

```
octave:1> symbols
octave:2> x = sym("x");
octave:3> f = Sin(Sqrt(x))/x^(1/3);
octave:4> df = differentiate(f,x)
df =

1/2*x^(-0.83333333333333331483)*cos(sqrt(x))-(0.33333333333333331483)*x^(-1.3333
333333333333148)*sin(sqrt(x))
```

## Definite integral

```
octave:25> y=x.^2
y = (sym)

   2
  x
octave:26> int(y,1,2)
ans = (sym) 7/3
octave:27> syms x
octave:28> f=2*x
f = (sym) 2·x
octave:29> int(f,1,2)
ans = (sym) 3
```