第一次课

1、什么是数学实验？
2、学习内容，学习目标
3、MATLAB 历史简介
4、MATLAB 优势（和 C、mathematica，maple，lindo，lingo）
5、MATLAB 入门
（1）软件界面介绍
工作变量窗口、当前路径窗口、历史记录窗口，图像窗口，编辑窗口（M 文件编辑器）
（2）向量、矩阵的创建和访问
注：**绿色**为 MATLAB 代码，**蓝色**为运行结果

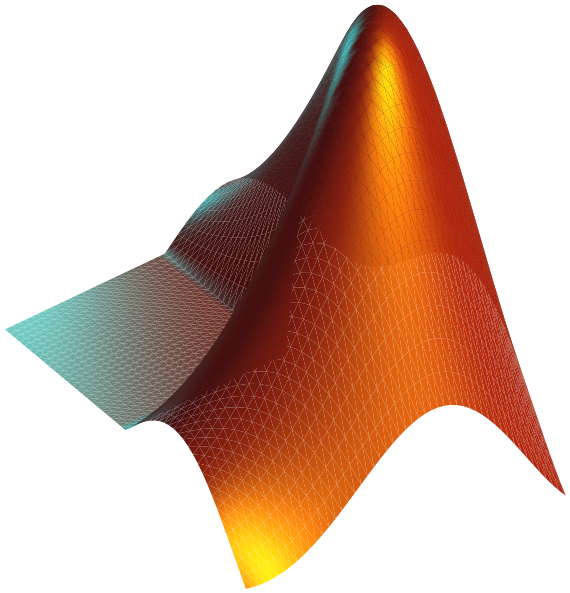
```
a=[1 2 3 4 5]

a =
     1     2     3     4     5

b=[1,2,3,4,5];

c=[1,2, 3 4]

c =
     1     2     3     4

whos c

  Name        Size                Bytes  Class     Attributes

  c           1x4                    32  double

a=1:1:5

a =
     1     2     3     4     5

b=[1:1:5]

b =
     1     2     3     4     5

c=1:5

c =
     1     2     3     4     5

d=a+[1 1 1 1 1]

d =
     2     3     4     5     6

e=a+ones(1,5)

e =
     2     3     4     5     6
```

```
s=d(2)

s =
     3

whos e s

  Name      Size             Bytes  Class     Attributes

  e         1x5                 40  double
  s         1x1                  8  double

s=[d(1)  d(5)]

s =
     2     6

d([1 5])

ans =
     2     6

b=[1;2;3;4;5]

b =
     1
     2
     3
     4
     5

b=a'

b =
     1
     2
     3
     4
     5

a=[1 4;2 5;3 6]

a =
     1     4
     2     5
     3     6

a(2,2)

ans =
     5

a(5)

ans =
```

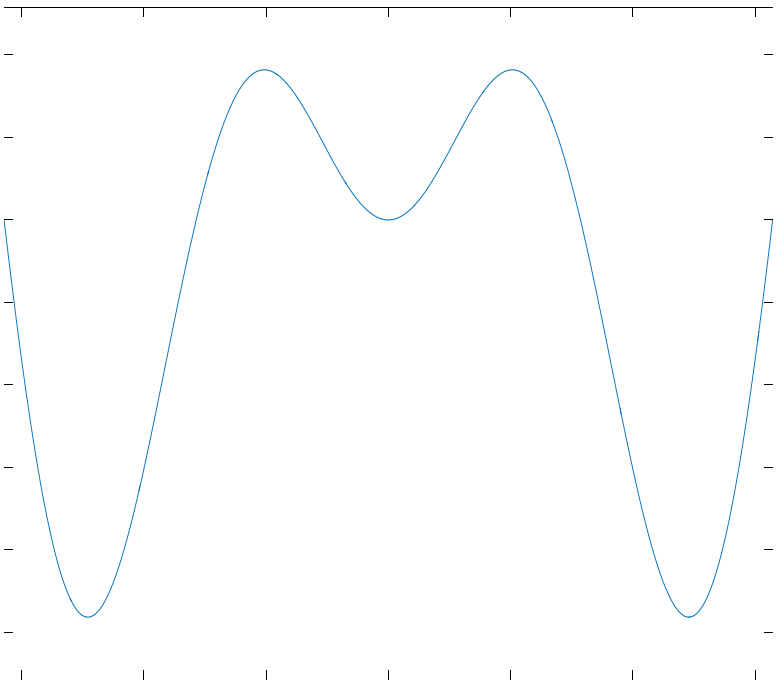
```
     5

b=magic(3)

b =
     8     1     6
     3     5     7
     4     9     2

b(4)

ans =
     1

b(1,2)

ans =
     1

c=[b(2,1)  b(2,3); b(1,1)  b(1,3)]

c =
     3     7
     8     6

b([2 1],[1 3])

ans =
     3     7
     8     6

whos

  Name        Size              Bytes  Class     Attributes

  a           3x2                  48  double
  ans         2x2                  32  double
  b           3x3                  72  double
  c           2x2                  32  double
  d           1x5                  40  double
  e           1x5                  40  double
  s           1x2                  16  double
```

(3)绘图简介

```
logo
```



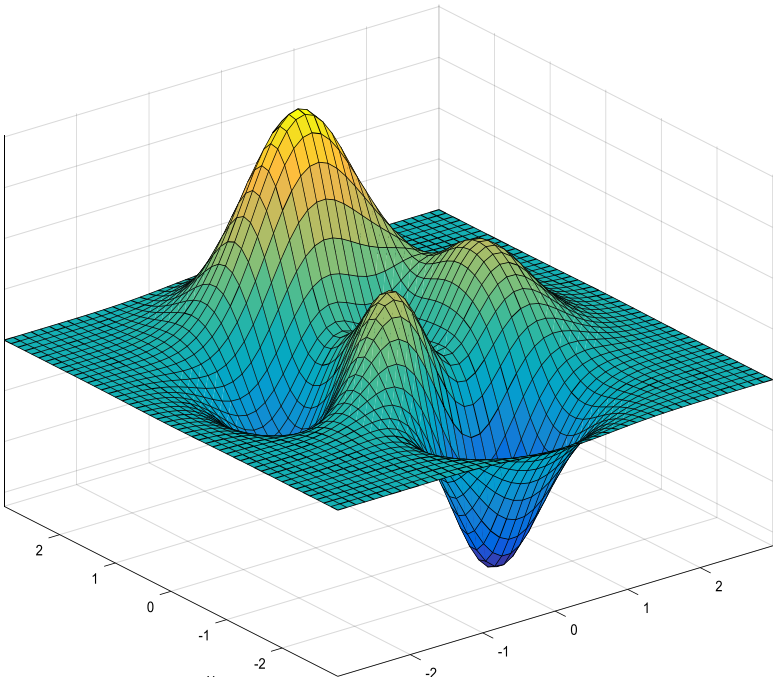
```
ezplot('sin(x)*x')
```



```
peaks
```

```
z =  3*(1-x).^2.*exp(-(x.^2) - (y+1).^2) ...
```

```
    - 10*(x/5 - x.^3 - y.^5).*exp(-x.^2-y.^2) ...
    - 1/3*exp(-(x+1).^2 - y.^2)
```




```
ezmesh('sin(x)*cos(y)*y')
```