Упражнение 2

```
>> 2*3

ans =

     6

>> k=3+4

k =

     7

>> (k+1)*(k-1)

ans =

    48

>> (x+1)*(x-1)
??? Undefined function or variable 'x'.
 % Нужно добавить переменную x
>> x = 123

x =

   123

>>  (x+1)*(x-1)

ans =

       15128


>> a=5; b=3;c=6; h=(a+b)*c;
>> h=(a+2)*3+...
3+(b+7)

h =

    34

>> whos a b h
  Name      Size            Bytes  Class     Attributes

  a         1x1                 8  double
  b         1x1                 8  double
  h         1x1                 8  double

>> clear a
>> whos
  Name      Size            Bytes  Class     Attributes
```

```
    ans       1x1                 8  double
    b         1x1                 8  double
    c         1x1                 8  double
    h         1x1                 8  double
    k         1x1                 8  double
```

Упражнение 3

```
>> x = 1; y = 2; z = 3; t = 4;
>> whos
  Name      Size            Bytes  Class     Attributes

  t         1x1                 8  double
  x         1x1                 8  double
  y         1x1                 8  double
  z         1x1                 8  double

>> clear y z
>> whos
  Name      Size            Bytes  Class     Attributes

  t         1x1                 8  double
  x         1x1                 8  double

>> B=[1 3 -1]

B =

     1     3    -1

>> B=[1, 3, -1]

B =

     1     3    -1

>> C=[-1;2.1]

C =

   -1.0000
    2.1000

>> A=[1 2 3 4;0 1 3 2]

A =

     1     2     3     4
     0     1     3     2

>> n=3

n =
```

```
     3

>> m=[3]

m =

     3

>> whos A B C n m
  Name      Size             Bytes  Class     Attributes

  A         2x4                 64  double
  B         1x3                 24  double
  C         2x1                 16  double
  m         1x1                  8  double
  n         1x1                  8  double

>> v=1:2:7

v =

     1     3     5     7

>> S=[-1+2*3 sqrt(2) abs(-3)]

S =

    5.0000    1.4142    3.0000
```

Упражнение 4

```
>> R = rand(3, 4).*100

R =

       77.491       8.4436       80.007       18.185
        81.73       39.978       43.141        26.38
       86.869       25.987       91.065       14.554

>> R(2,3)= -R(2,3)

R =

       77.491       8.4436       80.007       18.185
        81.73       39.978      -43.141        26.38
       86.869       25.987       91.065       14.554

>> R(1,3)= R(1,3)-4

R =

       77.491       8.4436       76.007       18.185
        81.73       39.978      -43.141        26.38
```

```
       86.869       25.987       91.065       14.554

>> R(:,2)=2*R(:,2)

R =

       77.491       16.887       76.007       18.185
        81.73       79.957      -43.141        26.38
       86.869       51.974       91.065       14.554

>> A = 1:5

A =

     1     2     3     4     5

>> B = 1:7

B =

     1     2     3     4     5     6     7

>> C = A'

C =

     1
     2
     3
     4
     5

>> D = B'

D =

     1
     2
     3
     4
     5
     6
     7

>> e = (1:10)'

e =

     1
     2
     3
     4
     5
     6
     7
     8
     9
```

```
    10
```

Упражнение 5

```
>> R = rand(3,4)

R =

    0.7094    0.6797    0.1190    0.3404
    0.7547    0.6551    0.4984    0.5853
    0.2760    0.1626    0.9597    0.2238

>> R(2,3) = -R(2,3)

R =

    0.7094    0.6797    0.1190    0.3404
    0.7547    0.6551   -0.4984    0.5853
    0.2760    0.1626    0.9597    0.2238

>> R(1,3) = R(1,3) - 4

R =

    0.7094    0.6797   -3.8810    0.3404
    0.7547    0.6551   -0.4984    0.5853
    0.2760    0.1626    0.9597    0.2238

>> R(:,2)=2*R(:,2)

R =

    0.7094    1.3594   -3.8810    0.3404
    0.7547    1.3102   -0.4984    0.5853
    0.2760    0.3252    0.9597    0.2238

>> R(1,:)=3*R(1,:)

R =

    2.1281    4.0782  -11.6430    1.0212
    0.7547    1.3102   -0.4984    0.5853
    0.2760    0.3252    0.9597    0.2238

>> a = 1:5

a =

     1     2     3     4     5

>> a = 1:7

a =
```

```
     1     2     3     4     5     6     7

>> c = a'

c =

     1
     2
     3
     4
     5
     6
     7

>> d = (1:2:20)'

d =

     1
     3
     5
     7
     9
    11
    13
    15
    17
    19

>> e = (1:10:20)'

e =

     1
    11
```

Упражнение 6

```
>> A = [
1 2 3
4 5 6
]

A =

     1     2     3
     4     5     6

>> B = [1 -2 1
-2 3 4]

B =
```

```
     1    -2     1
    -2     3     4

>> c = 2

c =

     2

>> D = ones(2,3)

D =

     1     1     1
     1     1     1

>> E = eye(3,3)

E =

     1     0     0
     0     1     0
     0     0     1

>> A+B

ans =

     2     0     4
     2     8    10

>> A.+B
??? A.+B
      |
Error: Unexpected MATLAB operator.

>> A+c

ans =

     3     4     5
     6     7     8

>> A+E
??? Error using ==> plus
Matrix dimensions must agree.

>> A-B

ans =

     0     4     2
     6     2     2

>> A-c

ans =
```

```
    -1     0     1
     2     3     4

>> c*A

ans =

     2     4     6
     8    10    12

>> c.*A

ans =

     2     4     6
     8    10    12

>> A+c*D

ans =

     3     4     5
     6     7     8

>> A-c*D

ans =

    -1     0     1
     2     3     4

>> A*B
??? Error using ==> mtimes
Inner matrix dimensions must agree.

>> A.*B

ans =

     1    -4     3
    -8    15    24

>> c^3

ans =

     8

>> A.*3

ans =

     3     6     9
    12    15    18

>> A'
```

```
ans =

     1     4
     2     5
     3     6

>> (A')'

ans =

     1     2     3
     4     5     6
```

Упражнение 7

```
>> (1:2:5).^0.5

ans =

    1.0000    1.7321    2.2361
```

Упражнение C1

```
>> A = -2:2:10

A =

    -2     0     2     4     6     8    10

>> A.*3

ans =

    -6     0     6    12    18    24    30

>> B = 45:-5:5

B =

    45    40    35    30    25    20    15    10     5

>> size(B)

ans =

     1     9
```

Упражнение С2

```
>> format short
>> pi

ans =

    3.1416

>> format long
>> pi

ans =

   3.141592653589793

>> format shortE
>> pi

ans =

  3.1416e+000

>> format longE
>> pi

ans =

    3.141592653589793e+000

>> format rational
>> pi

ans =

     355/113
```

Упражнение С3

```
>> syms pi
>> cos((0:12)*pi/6)

ans =

[ 1, 3^(1/2)/2, 1/2, 0, -1/2, -3^(1/2)/2, -1, -3^(1/2)/2, -1/2, 0, 1/2, 3^(1/2)/2,
1]

>> sin((0:12)*pi/6)

ans =

[ 0, 1/2, 3^(1/2)/2, 1, 3^(1/2)/2, 1/2, 0, -1/2, -3^(1/2)/2, -1, -3^(1/2)/2, -1/2,
```

```
0]

>> tan((0:12)*pi/6)

ans =

[ 0, 3^(1/2)/3, 3^(1/2), Inf, -3^(1/2), -3^(1/2)/3, 0, 3^(1/2)/3, 3^(1/2), Inf,
-3^(1/2), -3^(1/2)/3, 0]

>> cot((0:12)*pi/6)

ans =

[ Inf, 3^(1/2), 3^(1/2)/3, 0, -3^(1/2)/3, -3^(1/2), Inf, 3^(1/2), 3^(1/2)/3, 0,
-3^(1/2)/3, -3^(1/2), Inf]

>> x = -2:0.5:2;
>> y = cosh(x).^2 - sinh(x).^2

y =

  Columns 1 through 7

            1            1            1            1            1            1
1

  Columns 8 through 9

            1            1
```