1.1

a) u=[1 2 3]

u =

1 2 3

b) v=[1;2;3]

v =

1

2

3

c) v=[1:10]

v =

1 2 3 4 5 6 7 8 9 10

d) v=[2:2:12]

v =

2 4 6 8 10 12

e) A=[2 2 3; 4 5 6; 7 8 9]

A =

2 2 3

4 5 6

7 8 9

1.2

a) B=A(2:3,1:2)

B =

4 5

7 8

b) C=A(:,1:2)

C =

2 2

4 5

7 8

c) D=[A;4 4 4]

D =

2 2 3

4 5 6

7 8 9

4 4 4

d) E=D([2 4],:)

E =

4 5 6

4 4 4

e) F=[0:3:9;2:2:8;5:5:20]

F =

0 3 6 9

2 4 6 8

5 10 15 20

1.3

a) I=eye(5)

I =

1 0 0 0 0

0 1 0 0 0

0 0 1 0 0

0 0 0 1 0

0 0 0 0 1

b) M=rand(3)

M =

0.8147 0.9134 0.2785

0.9058 0.6324 0.5469

0.1270 0.0975 0.9575

c) M=2*rand(4,3)-1

M =

0.9298 -0.0292 0.8315

-0.6848 0.6006 0.5844

0.9412 -0.7162 0.9190

0.9143 -0.1565 0.3115

d) M=zeros(2,3)

M =

0 0 0

0 0 0

e) M=ones(2)

M =

1 1

1 1

f) M=10*ones(10)

M =

10 10 10 10 10 10 10 10 10 10

10 10 10 10 10 10 10 10 10 10

10 10 10 10 10 10 10 10 10 10

10 10 10 10 10 10 10 10 10 10

10 10 10 10 10 10 10 10 10 10

10 10 10 10 10 10 10 10 10 10

10 10 10 10 10 10 10 10 10 10

10 10 10 10 10 10 10 10 10 10

10 10 10 10 10 10 10 10 10 10

10 10 10 10 10 10 10 10 10 10

g) diag(diag(A))

ans =

2 0 0

0 5 0

0 0 9

1.4

A=[1,3,5;0,4,1;2,2,1];

B=ones(3);

a=[1,2,1];

b=[0,3,5];

a) A+B

ans =

2 4 6

1 5 2

3 3 2

b) A*B

ans =

9 9 9

5 5 5

5 5 5

c) a.*b

ans =

0 6 5

d) A.*B

ans =

1 3 5

0 4 1

2 2 1

1.5

M-file:

```
function [soma,produto]=func1(x,y)
soma=x+y;
produto=x*y;
```

Janela dos comandos:

[a,b]=func1(12,13)

a =

25

b =

156

1.6

M-file:

```
function [s,p]=func2(x)
s=sum(x);
p=prod(x);
```

Janela dos comandos:

x=[1 4 1 67 1 5 8];

[a,b]=func2(x)

a =

87

b =

10720

1.7

M-file:

```
function [f]=func3(x,y)
f=min(x,y);
```

Janela dos comandos:

func3(12, 45)

ans =

12

2

a)

A=[4,13,2;-8,10,8;2,6.5,5.5];

b=[-15;6;-3];

x=A\b

x =

-1

-1

1

b)

A=[2 3;2 3.0001];

b=[1;0.9999];

x=A\b

x =

2.0000

-1.0000

c)

A=[2 3;2 3.0001];

b=[1;2];

```
 x=A\b

x =

  1.0e+004 *

   -1.4999

    1.0000
```

d)

```
A=[-30,9,9;10,-2.9999,-2.9999;6,-6,-20];

b=[10;-3.3333;10];

x=A\b

x =

   -0.2333

    1.2905

   -0.9571
```

2.2

a)

```
A=[2 3;2 3.0001];

det(A)

ans =

  2.0000e-004
```

b)

```
B=[-602.9 -0.4762 301.0; -248.8 -0.1048 124.2; -200.6 0 101.7];

>> det(B)

ans =

  -87.0573
```

c)

```
C=[10 1 4 0; 1 10 5 -1; 4 5 10 7; 0 -1 7 9];

det(C)
```

```
ans =

   1.0000
```

2.3

```
A=[2.4 6.0 -2.7 5.0; -2.1 -2.7 5.9 -4.0; 3.0 5.0 -4.0 6.0; 0.9 1.9 4.7 1.8];

b=[14.6;-11.4;14.0;-0.9];
```

a)

```
x=A\b

x =

   1.0000

   2.0000

  -1.0000

  -0.5000
```

b)

```
det(A)

ans =

  -4.8720
```

c)

```
inv(A)

ans =

   3.0090  -13.0090  -13.2221    6.8062

   0.7266   -0.7266   -1.1860    0.3202

  -0.0493    0.0493    0.0296    0.1478

  -2.1429    7.1429    7.7857   -3.5714
```

2.4

```
A=[6 1 2 0 5; 2 8 1 2 2; 1 -2 8 1 0; 0 0 -1 9 2; 1 1 0 -1 7];

b=[10;15;8;10;8];
```

a)

```
x=A\b

x =

   0.1804

   1.1648

   1.1442

   0.9954

   1.0929
```

b)

```
det(A)

ans =

  20800
```

c)

```
inv(A)

ans =

   0.2049   -0.0206   -0.0493   -0.0054   -0.1389

  -0.0412    0.1278   -0.0091   -0.0273    0.0007

  -0.0361    0.0337    0.1274   -0.0192    0.0216

   0.0012    0.0069    0.0119    0.1046   -0.0327

  -0.0232   -0.0143    0.0100    0.0196    0.1579
```