PME3380 - MODELAGEM DE SISTEMAS DINÂMICOS
PEDRO MORETTO DI PIETRO - 9853123

LISTA 1

Repetir e exercitar os seguintes comandos do SCILAB: Objetivo: familiarizar-se com alguns dos comandos básicos do Scilab.

Cópia do console utilizado:

```
Execução de iniciação:
  carregando o ambiente inicial

--> a=1
 a  =

   1.

--> a=2+%i
 a  =

   2. + i

--> b=-5-3*%i
 b  =

  -5. - 3.i

--> a==1
 ans  =

  F

--> v=1:5
 v  =

   1.   2.   3.   4.   5.

--> A=[2 2 3;0 0 7;5 9 -1]
 A  =

   2.   2.   3.
   0.   0.   7.
   5.   9.  -1.
```

```
--> a=1;b=2;

--> A=[a+b %pi 3
 >  b^2 0 atan(a)
 >  5 sin(b) -1]
 A  =

   3.   3.1415927   3.
   4.   0.          0.7853982
   5.   0.9092974   -1.

--> B = zeros(2,3)
 B  =

   0.   0.   0.
   0.   0.   0.

--> A=[2 2 3;0 0 7;5 9 -1];

--> B=zeros(A)
 B  =

   0.   0.   0.
   0.   0.   0.
   0.   0.   0.

--> c=ones(2,3)
 c  =

   1.   1.   1.
   1.   1.   1.

--> D=diag(1:5)
 D  =

   1.   0.   0.   0.   0.
   0.   2.   0.   0.   0.
   0.   0.   3.   0.   0.
   0.   0.   0.   4.   0.
   0.   0.   0.   0.   5.

--> A=[1 2 3
 >  4 5 6
 >  7 8 9]
 A  =
```

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

--> B=diag(A)
 B  =

   1.
   5.
   9.

--> C=diag(diag(A))
 C  =

   1.   0.   0.
   0.   5.   0.
   0.   0.   9.

--> A=diag(ones(1,3))
 A  =

   1.   0.   0.
   0.   1.   0.
   0.   0.   1.

--> B=A+A
 B  =

   2.   0.   0.
   0.   2.   0.
   0.   0.   2.

--> C=B+1
 C  =

   3.   1.   1.
   1.   3.   1.
   1.   1.   3.

--> A=[1 2 3;4 5 6;7 8 9]
 A  =

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

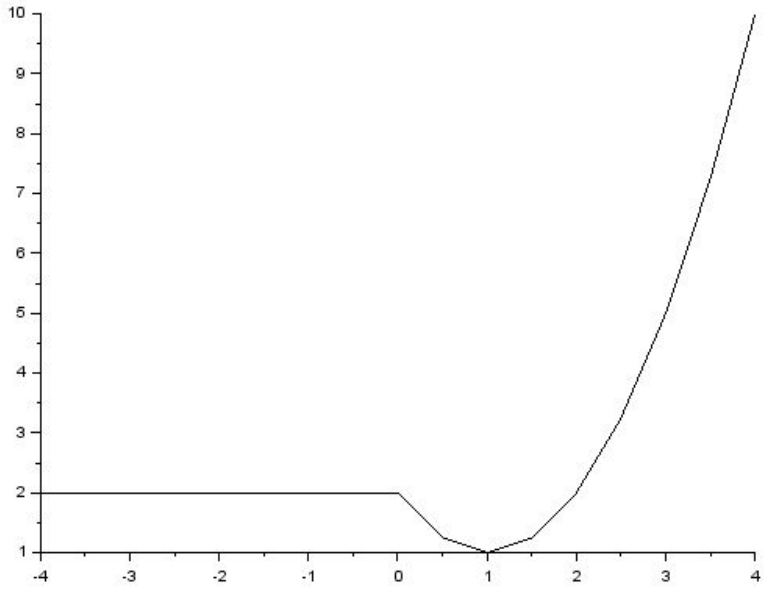
```
--> C=[1 2 0;0 0 1;0 2 3]
 C  =

   1.   2.   0.
   0.   0.   1.
   0.   2.   3.

--> D=A*C
 D  =

   1.   8.    11.
   4.   20.   23.
   7.   32.   35.

--> A=[1 0 0;0 2 3;5 0 4]
 A  =

   1.   0.   0.
   0.   2.   3.
   5.   0.   4.

--> B=[2 0 0;0 2 2;0 0 3]
 B  =

   2.   0.   0.
   0.   2.   2.
   0.   0.   3.

--> C=A.*B
 C  =

   2.   0.   0.
   0.   4.   6.
   0.   0.   12.

--> a=C(2,:)
 a  =

   0.   4.   6.

--> b=C(:,3)
 b  =

   0.
   6.
   12.
```

```
--> b=C($,:)
 b  =

   0.   0.   12.

--> A=[1 2 3; 4 5 6; 7 8 9]
 A  =

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

--> t=trace(A)
 t  =

   15.

--> B=A'
 B  =

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

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

   0.   1.
  -2.  -3.

--> B=inv(A)
 B  =

  -1.5  -0.5
   1.    0.

--> A*B
 ans  =

   1.   0.
   0.   1.

--> d=det(A)
 d  =
```

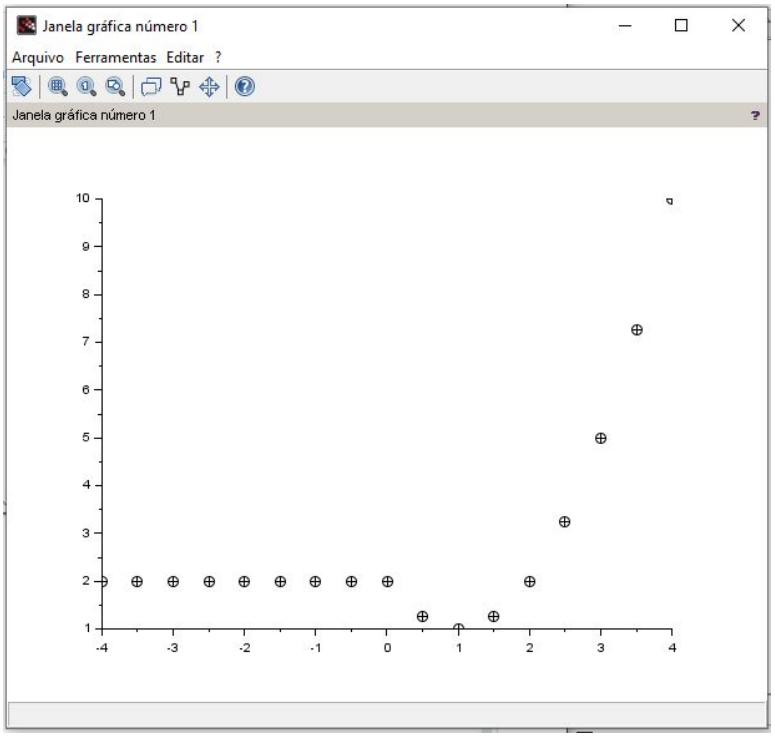
2.

```
--> v=[0 -1]
 v  =

  0.  -1.

--> p1=poly(v,'x')
 p1  =

  x +x²

--> p2=poly([1 2 1], 'z', 'coeff')
 p2  =

  1 +2z +z²

--> p1=poly(v,'s')
 p1  =

  s +s²

--> p2=poly([5 2 1], 's', 'coeff')
 p2  =

  5 +2s +s²


--> f=p1/p2
 f  =


     s +s²
   ---------
   5 +2s +s²

--> a=coeff(p2)
 a  =

  5.   2.   1.

--> p=roots(p1)
 p  =

  -1. + 0.i
   0. + 0.i
```

```
--> [v,d]=spec(A)
 v  =

  0.7071068 + 0.i  -0.4472136 + 0.i
 -0.7071068 + 0.i   0.8944272 + 0.i
 d  =

 -1. + 0.i   0. + 0.i
  0. + 0.i  -2. + 0.i

--> deff('[y]=teste(x)','if x<0 then y=-(x^2),else y=sin(x),end')

--> y=teste(0.5*%pi)
 y  =

  1.

--> deff('[y]=h(x)','n=length(x);for i=1:n, if x(i)<0 then y(i)=2, else y(i)=1+(x(i)-1)^2, end,end');

--> x=-4:0.5:4;

--> y=h(x);

--> plot2d(x,y)
```



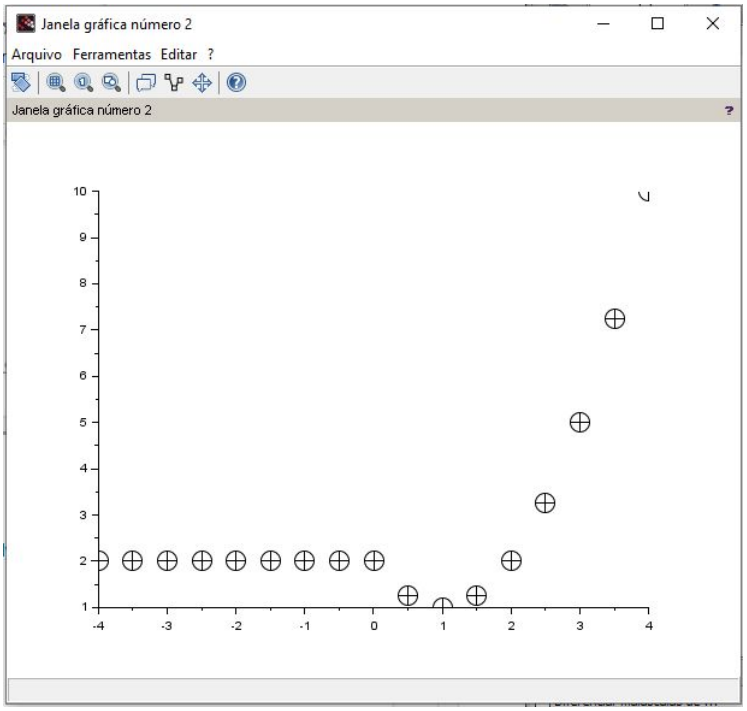

```
--> set("current_figure",1)

--> plot2d(x,y,-3)
```



--> set("current_figure",2)

--> xset("mark size",4)
Aviso: This feature will be permanently removed in Scilab 6.1.0

--> plot2d(x,y,-3)



Usando o programa de edição de texto do Scilab, crie um novo arquivo e escreva o seguinte conjunto de instruções:

--> exec('C:\Users\pedro\Desktop\teste.sci', -1)

--> teste(0.5*%pi)
ans =

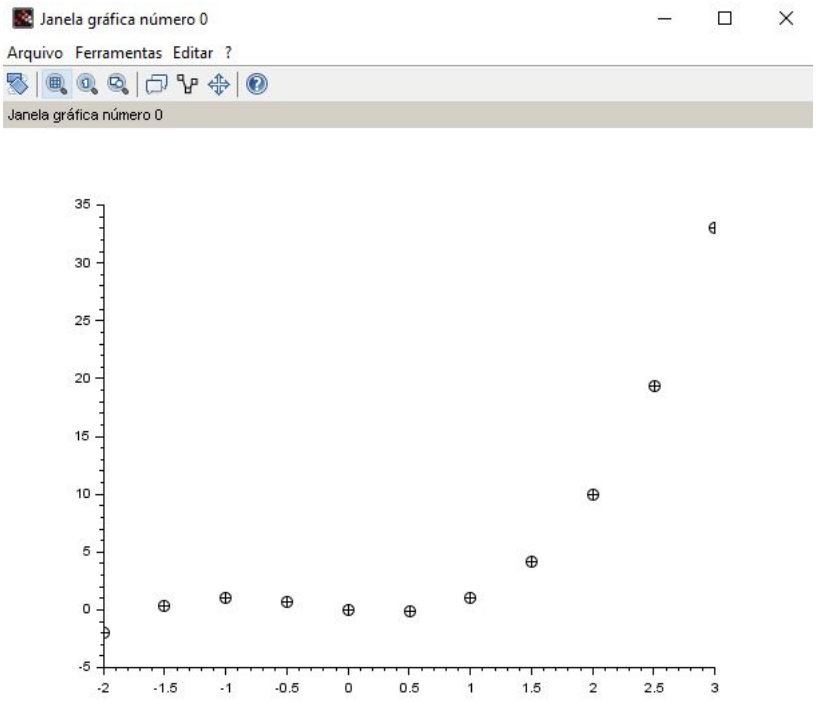
3.6078962

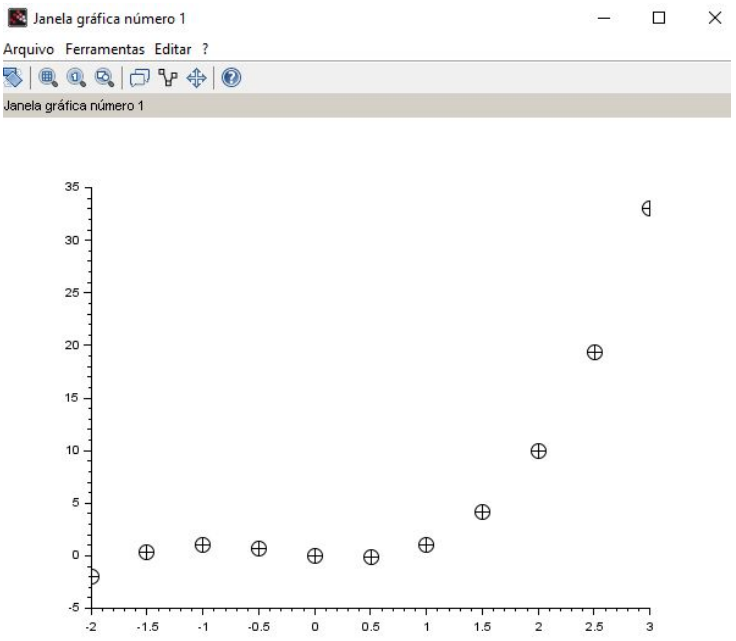
Usando o programa de edição de texto do Scilab, crie um outro arquivo e escreva o seguinte conjunto de instruções:

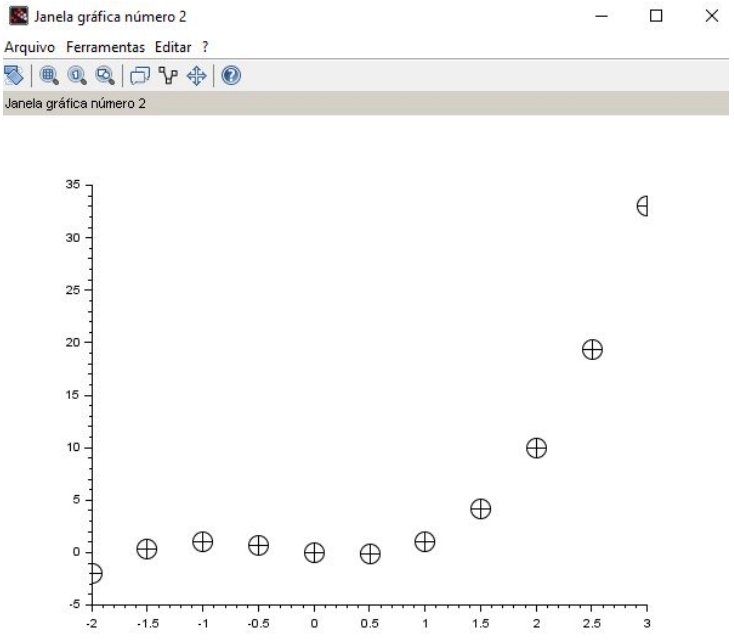
exec('C:\Users\pedro\Desktop\teste2.sce',-1)
Aviso: This feature will be permanently removed in Scilab 6.1.0

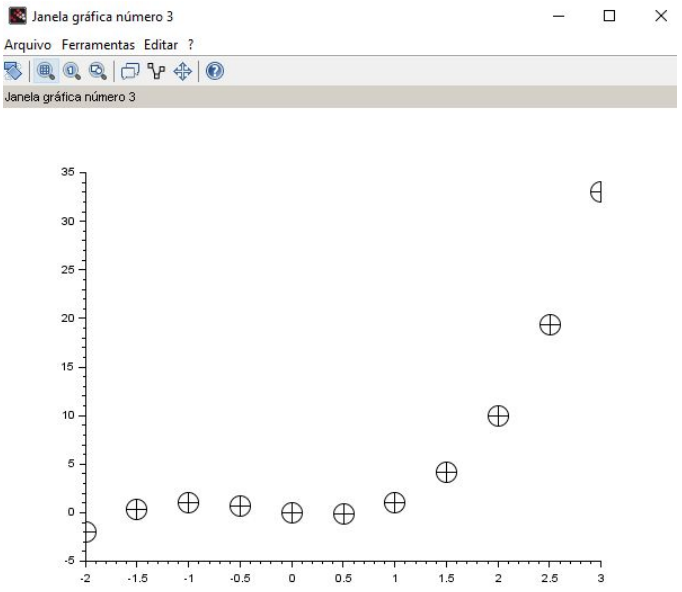
Aviso: This feature will be permanently removed in Scilab 6.1.0

Aviso: This feature will be permanently removed in Scilab 6.1.0




Janela gráfica número 1
Arquivo Ferramentas Editar ?
Janela gráfica número 1
35
30
25
20
15
10
5
0
-5
-2
-1.5
-1
-0.5
0
0.5
1
1.5
2
2.5
3


Janela gráfica número 2
Arquivo Ferramentas Editar ?
Janela gráfica número 2
35
30
25
20
15
10
5
0
-5
-2
-1.5
-1
-0.5
0
0.5
1
1.5
2
2.5
3


Janela gráfica número 3
Arquivo Ferramentas Editar ?
Janela gráfica número 3
35
30
25
20
15
10
5
0
-5
-2
-1.5
-1
-0.5
0
0.5
1
1.5
2
2.5
3