

```

%es_1
v1=linspace(0,7*pi,85);
v2=sin(v1);
figure
plot(v1,v2)
index_v2=find(v2>-0.5&v2<0);
num_v2=length(index_v2);
M=reshape(v1,5,17);
M=M.';
m1=mean(M,2);
m2=mean(M);
M(:,3)=m2;
save medi.mat m1 m2

```

```

%es_2
num=[1 -2.7 3.52 -1.64 0.24];
den=[1 -1.4 0.9 -0.2 0];

```

```

p=roots(den);
z=roots(num);

```

```

figure
plot(p,'r*');
hold on
plot(z,'go');

```

```

p_1=abs(p)>1;
z_1=abs(z)>1;

```

```

if any(p_1)
    figure
    index_p_1=find(p_1);
    plot(p(index_p_1),'r*');
end

```

```

if any(z_1)
    hold on
    index_z_1=find(z_1);
    plot(p(index_z_1),'go');
end

```

```

z=-1:0.1:1;

```

```
z=z+(z==0)*eps;
```

```
%N.B. non veniva richiesta la verifica automatica dell'esistenza di poli  
appartenenti a z
```

```
%n? la verifica della possibilit? che H assumesse valori pari a Inf o Nan
```

```
H=(z.^4-2.7*z.^3+3.52*z.^2-1.64*z+0.24)./(z.^4-1.4*z.^3+0.9*z.^2-0.21*z);
```

```
figure
```

```
plot(z,H)
```

```
%es_m3
```

```
function [y,err]=es_3(x,X);
```

```
if size(X,1)~=size(X,2) | rank(X)~=size(X,1) | length(x)~=size(X,1)
```

```
    y=[];
```

```
    err=1;
```

```
elseif ~any(x)
```

```
    err=2;
```

```
    y=[];
```

```
else
```

```
    y=X\y;
```

```
    err=0;
```

```
end
```

```
b=struct('campo_1',{1' '2'},'campo_2',{'a' 'b'});
```

```
b(2).campo_1
```

```
rmfield(b,'campo_1')
```