

I.

```
>> NUM = [1.8]
NUM = 1.8000
>> DEN = [0.0008 0.02006 2.7015]
DEN = 0.0008 0.0201 2.7015
>> [A,B,C,D] = tf2ss(NUM,DEN)
A =
    1.0e+03 *   -0.0251   -3.3769
               0.0010       0
B = 1
    0
C = 0    2250
D = 0
```

II.

```
>> A = [1 0; 1 -1]
A =
    1    0
    1   -1
>> B = [1 0; 0 1]
B =
    1    0
    0    1
>> C = [2 0; 1 1]
C =
    2    0
    1    1
>> D = [2 0; 0 0]
D =
    2    0
    0    0
>> eig(A)
ans =
   -1
    1
>> lambda = [-1+(10*eps); -1-(10*eps)]
lambda =
   -1.0000
   -1.0000
>> format long
>> lambda = [-1+(10*eps); -1-(10*eps)]
lambda =
  -0.9999999999999998
 -1.0000000000000002
>> [K] = place(A,B,lambda)
K =
  1.9999999999999998      0
  1.0000000000000000  0.0000000000000002
```