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% Brandon Ramirez Lopez
% ME 203 Lab 15
clc,clear all,format compact
A=ones(3,3);
B=zeros(3,3);
C=B;
for i=1:size(A,1)
    for j=1:size(A,2)
        if i==j
            C(i,j)=i*A(i,j);
        end
    end
end
C

C =

     1     0     0
     0     2     0
     0     0     3

D=ones(5,5);
E=zeros(5,5);
i=0;
j=0;
while i<size(D,1)
    i=i+1;
    while j<size(D,2)
        j=j+1;
        if i==j
            F(i,j)=(i+j)*D(i,j);
        else
            F(i,j)=D(i,j);
        end
    end
    j=0;
end
F

F =

     2     1     1     1     1
     1     4     1     1     1
     1     1     6     1     1
     1     1     1     8     1
     1     1     1     1    10

M=[5 4 3;10 12 10;7 8 9];
p=det(M);
q= inv(M);
I=eye(3,3)
N=inv(q)*I

I =

     1     0     0

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      0      1      0
      0      0      1
N =
      5.0000      4.0000      3.0000
     10.0000     12.0000     10.0000
      7.0000      8.0000      9.0000

T=[15 9;12 -4]
S=[84;0]
R=T\S
r=inv(T)*S

T =
      15      9
      12     -4
S =
      84
       0
R =
       2
       6
r =
      2.0000
      6.0000

```

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