```
% Q1

docondition()

function docondition()
  for i = 7:12
    A = hilb(i);    % Hilbert Matrix A
    c = cond(A);    % condition number
    d = det(A)*det(inv(A));
    disp(['Matrix of size ' num2str(i)])
    disp('Condition number of matrix is :')
    c
    disp('det(A)det(inv(A)) of matrix is :')
    d
    disp('Discrepancy of A*inv(A) with I is: ')
    disp(abs(d - det(eye(i))))
    fprintf('\n');
  end
end
```

```
Matrix of size 7
Condition number of matrix is :

c =

   4.7537e+08

det(A)det(inv(A)) of matrix is :

d =

    1.0000

Discrepancy of A*inv(A) with I is:
   2.6953e-09


Matrix of size 8
Condition number of matrix is :

c =

   1.5258e+10

det(A)det(inv(A)) of matrix is :

d =

    1.0000

Discrepancy of A*inv(A) with I is:
   1.8417e-08
```

```
Matrix of size 9
Condition number of matrix is :

c =

   4.9315e+11

det(A)det(inv(A)) of matrix is :

d =

    1.0000

Discrepancy of A*inv(A) with I is:
   7.2094e-07


Matrix of size 10
Condition number of matrix is :

c =

   1.6025e+13

det(A)det(inv(A)) of matrix is :

d =

    1.0000

Discrepancy of A*inv(A) with I is:
   2.0467e-05


Matrix of size 11
Condition number of matrix is :

c =

   5.2211e+14

det(A)det(inv(A)) of matrix is :

d =

    1.0003

Discrepancy of A*inv(A) with I is:
   2.5457e-04


Warning: Matrix is close to singular or badly scaled. Results may be
```

```
inaccurate. RCOND =  2.602837e-17.
Matrix of size 12
Condition number of matrix is :

c =

   1.6284e+16

det(A)det(inv(A)) of matrix is :

d =

    0.9730

Discrepancy of A*inv(A) with I is:
    0.0270
```

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