```
function matrixP

for in=1:4
    n=in*4;

    % enter matrix A
    A=3*pascal(n);

    % pick exact solution
    x=ones(n,1);
    b=A*x;

    % solve equation
    xm=A\b;
    xi=inv(A)*b;
    r=b-A*xm;

    % compute errors/results
    errorXM=norm(x-xm,inf)/norm(x,inf);
    errorXI=norm(x-xi,inf)/norm(x,inf);
    r_norm=norm(r,inf);
    kA=cond(A,inf);
    epskA=eps*kA;

    fprintf('\n n = %d   ErrorXM = %5.3e   ErrorXI = %5.3e  \n||r|| =
 %5.3e  K(A) = %5.3e  eps*K(A) = %5.3e\n',n,errorXM,errorXI,r_norm,
 kA, epskA)
end
```

```
 n = 4   ErrorXM = 1.021e-14   ErrorXI = 1.421e-14
||r|| = 0.000e+00  K(A) = 1.190e+03  eps*K(A) = 2.642e-13

 n = 8   ErrorXM = 2.754e-10   ErrorXI = 1.155e-09
||r|| = 3.638e-12  K(A) = 3.959e+07  eps*K(A) = 8.790e-09

 n = 12   ErrorXM = 1.335e-06   ErrorXI = 6.071e-05
||r|| = 4.657e-10  K(A) = 1.739e+12  eps*K(A) = 3.861e-04
Warning: Matrix is close to singular or badly scaled. Results may be
 inaccurate.
RCOND =  1.167022e-17.
Warning: Matrix is close to singular or badly scaled. Results may be
 inaccurate.
RCOND =  1.172739e-17.
Warning: Matrix is close to singular or badly scaled. Results may be
 inaccurate.
RCOND =  1.172739e-17.

 n = 16   ErrorXM = 3.899e-04   ErrorXI = 1.719e+00
||r|| = 3.725e-09  K(A) = 8.527e+16  eps*K(A) = 1.893e+01
```

Published with MATLAB® R2017a