```
>> H
H =

   1.000000   0.500000   0.333333   0.250000   0.200000   0.166667
   0.500000   0.333333   0.250000   0.200000   0.166667   0.142857
   0.333333   0.250000   0.200000   0.166667   0.142857   0.125000
   0.250000   0.200000   0.166667   0.142857   0.125000   0.111111
   0.200000   0.166667   0.142857   0.125000   0.111111   0.100000
   0.166667   0.142857   0.125000   0.111111   0.100000   0.090909

>> d
d = 5.3673e-18
>> Y
Y =

   3.6000e+01  -6.3000e+02   3.3600e+03  -7.5600e+03   7.5600e+03  -2.7720e+03
  -6.3000e+02   1.4700e+04  -8.8200e+04   2.1168e+05  -2.2050e+05   8.3160e+04
   3.3600e+03  -8.8200e+04   5.6448e+05  -1.4112e+06   1.5120e+06  -5.8212e+05
  -7.5600e+03   2.1168e+05  -1.4112e+06   3.6288e+06  -3.9690e+06   1.5523e+06
   7.5600e+03  -2.2050e+05   1.5120e+06  -3.9690e+06   4.4100e+06  -1.7464e+06
  -2.7720e+03   8.3160e+04  -5.8212e+05   1.5523e+06  -1.7464e+06   6.9854e+05

>> c
c = 2.9070e+07
>>
```

```
>> H = hilb(6);
>> d = det(H);
>> Y = inv(H);
>> c = cond(H, inf);
>> B = inv(zeros(1, 6));
error: inverse: A must be a square matrix
>> B = zeros(1, 6);
>> B(1, 1) = 1;
>> x = H\B
error: operator \: nonconformant arguments (op1 is 6x6, op2 is 1x6)
>> x = H\B'
x =

     36
   -630
   3360
  -7560
   7560
  -2772

>> E = zeros(1, 6);
>> E(1, 1) = 1; E(1, 4) = 0.01;
>> x = H\E'
x =

  -3.9600e+01
   1.4868e+03
  -1.0752e+04
   2.8728e+04
  -3.2130e+04
   1.2751e+04

>>
```

```
>> A = zeros(4, 4);
>> A(1, 2) = 1; A(1, 3) = 2; A(1, 4) = -1; A(2, 1) = 1; A(2, 2) = 1; A(2, 3)
 = -1; A(3, 1) = -1; A(3, 2) = -1; A(3, 3) = 1; A(3, 4) = 3; A(4, 1) = 1; A(
4, 2) = 2; A(4, 4) = 1;
>> [L, U] = lu(A)
L =

    0    1    0    0
    1    0    0    0
   -1    0    0    1
    1    1    1    0

U =

    1    1   -1    0
    0    1    2   -1
    0    0   -1    2
    0    0    0    3

>> b = zeros(1, 4);
>> b(1, 1) = -1; b(1, 2) = 5; b(1, 3) = 1; b(1, 4) = 9;
>> y = L\b'
y =

    5
   -1
    5
    6

>> x = U\y
x =

    1
    3
   -1
    2

>>
```