```
>> Assignment_1

snormal =

    0.3536    0.3536    0.3536
   -0.3536    0.3536    0.3536
    0.3536    0.3536   -0.3536
   -0.3536    0.3536   -0.3536
    0.3536   -0.3536    0.3536
   -0.3536   -0.3536    0.3536
    0.3536   -0.3536   -0.3536
   -0.3536   -0.3536   -0.3536


orthogonal =

    1.0000   -0.0000         0
   -0.0000    1.0000   -0.0000
         0   -0.0000    1.0000


y =

         0   -2.0000    1.0000
    2.0000    0.0000    1.0000
    2.0000    2.0000    1.0000

savg =

    0.3536
         0
    0.3536
         0
         0
   -0.3536
         0
   -0.3536


r =

   -1.0000
    1.0000
    2.0000


Tavg =

    -1
     1
     2


ans =

    1.0000   -0.0411    0.0645
   -0.0411    1.0000    0.0558
    0.0645    0.0558    1.0000

ans =

    1.0000   -0.0411    0.0645
   -0.0411    1.0000    0.0558
    0.0645    0.0558    1.0000


y =

    0.1466   -1.9442    0.8884
    2.0645   -0.0264    1.1290
    1.9823    1.9736    1.2406


ans =

    1.0000   -0.0089   -0.0059
   -0.0089    1.0000   -0.0040
   -0.0059   -0.0040    1.0000


y =

    0.0118   -2.0040    1.0081
    1.9941   -0.0218    0.9882
    1.9764    1.9782    0.9802
```

T is the matrix of the transpose of T1, T2, and T3 and snormal is the normalized form of s.

On multiplying T with the transpose of snormal we get x.

Further multiplying x with savg, where savg is the average of snormal, we get r. We then see that the value of r and Tavg is the same where Tavg is the average of T.