In [1]:

```
# Question 3
#Find the inverse of the following invertible matrix using Gauss-Jordon elimination. Ke
ep only up to 2 places in decimal. Verify that your solution is indeed the inverse of t
he given matrix.
#
# [A|b] =
#  _                  _
# |  0 2 1  | 1 0 0  |
# |  4 0 1  | 0 1 0  |
# |_ -1 2 0 | 0 0 1 _|




#calling the matrix in readable form
#importing functions from library
from My_Lib import Gauss_jordan
from My_Lib import matrix_mul

#calling the matrix in readable form
list_C=[]
with open("matrix3.txt") as matC:
    for k in matC:
        list_C.append(list(map(float, k.split())))




#using the gauss jordan function
a,b=Gauss_jordan(list_C)
print("The Inverse of the given matrix is A[-1]:")

# Print the inverse matrix in readable form
for i in range(len(b)):
    for j in range(len(b)):
        print("%.2f"%b[i][j],end =' ') #each element of the matrix is rounded upto 2 pl
aces of decimal
    print()

#verification of A*A[-1]=I, which verifies the inverse is correct or not

print("\n Verification of A*A[-1] = I")

list_d=matrix_mul(list_C,b)
for i in range(len(list_d)):
    for j in range(len(list_d)):
        print("%.2f"%list_d[i][j],end =' ') #each element of the matrix is rounded upto
2 places of decimal
    print()
```

```
The Inverse of the given matrix is A[-1]:
-0.33 0.33 0.33
-0.17 0.17 0.67
1.33 -0.33 -1.33

 Verification of A*A[-1] = I
1.00 0.00 0.00
0.00 1.00 0.00
0.00 0.00 1.00
```