Question **1**

Correct

Mark 100.00 out of 100.00

Use Gaussian elimination without partial pivoting to solve a matrix.

Hint: First value is the number of unknowns, remaining values are the elements of the matrix.

For example:

Input	Result
3 1 2 4 18 2 12 -2 9 5 26 5 14	X0 = 53.35 X1 = -8.88 X2 = -4.40

Answer: (penalty regime: 0 %)

Reset answer

```
'''Program to solve a matrix using Gaussian elimination without partial pivoting.
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'''
import numpy as np
import sys
n=int(input())
a=np.zeros((n,n+1))
x=np.zeros(n)
for i in range(n):
    for j in range(n+1):
        a[i][j]=float(input())
for i in range(n):
    if a[i][i]==0.0:
        sys.exit("Divide by zero detected!")

    for j in range(i+1,n):
        ratio=a[j][i]/a[i][i]
        for k in range(n+1):
            a[j][k]=a[j][k]-ratio*a[i][k]

x[n-1]=a[n-1][n]/a[n-1][n-1]

for i in range(n-2,-1,-1):
    x[i]=a[i][n]
    for j in range(i+1,n):
        x[i]=x[i]-a[i][j]*x[j]
    x[i]=x[i]/a[i][i]

for i in range(n):
    print('X%d = %0.2f' %(i,x[i]),end=' ')
```

	Input	Expected	Got	
✓	3 1 2 4 18 2 12 -2 9 5 26 5 14	X0 = 53.35 X1 = -8.88 X2 = -4.40	X0 = 53.35 X1 = -8.88 X2 = -4.40	✓

Passed all tests! ✓

▸ Show/hide question author's solution (Python3)

Correct

Marks for this submission: 100.00/100.00.