**Improved Left recursion**

num=int(input('Enter the number of productions:'))

lr=0

final=list()

for l in range(num):

print('Enter production ',l,' :')

gram=input()

temp=list()

alpha=list()

beta=list()

temp.append(gram[0])

i=''

temp.append(gram[3:])

i=temp[0]

if((temp[1].find('|'))!=-1):

temp[1]=temp[1].split('|')

for prod in temp[1]:

if((prod.find(i)==0)):

alpha.append(prod[1:])

lr+=1

else:

beta.append(prod)

if(lr!=0):

newgram=''

newgram=i+'->'

for j in beta:

newgram+=(j+i+'\''+'|')

newgram=newgram[:-1]

newgram1=''

newgram1=i+'\''+'->'

for j in alpha:

newgram1+=(j+i+'\''+'|')

newgram1+='epsilon'

final.append(newgram)

final.append(newgram1)

else:

final.append(gram)

lr=0

print('Removing left recursion:')

for i in final:

print(i)

