Definition of subproblem used:

DP[i][j] as the max success probability if reaction i has j units of catalyst.

comp[i][j] stores the units of catalyst assigned to the ith reaction such that we can get the max success probability.

base cases:

DP[k][0]=0 for 1<=k<=N because its given e[k][0]=0

DP[1][j]=e[1][j] for 1<=j<=C as if there is only one reaction, all the j units of catalyst must be assigned to it.

comp[1][j]=j for 1<=j<=C as for only 1 reaction all the units of catalyst be set to that reaction.

Recursive formulation:

for 2<=x<N, x<=y<=C :

if(x==y) : DP[x][y]=D[x-1][y-1]*e[x][1] (as all essential reactions must have one catalyst each)

comp[x][y]=1 as xth reaction will be assigned 1 catalyst.

else : DP[x][z]=max(DP[x-1][y-z]*e[x][z]) where 1<=z<=(y-1)

comp[x][y]=tempz where tempz=value of z for which maximum is found above (as this means xth reaction must have tempz catalyst)