package Matrix\_Chain\_multipllication;

import java.util.Scanner;

class MCM

{

Scanner sc = new Scanner(System.in);

protected int m[][], p[];

MCM(int n)

{

p = new int[n+1];

m = new int[n+2][n+2];

for(int i = 0 ; i<=n ; i++)

{

p[i] = sc.nextInt();

}

}

void result(int n)

{

for(int i = n ; i>= 1 ; i--)

for(int j = i+1 ; j<=n ; j++)

{

int cost = Integer.MAX\_VALUE;

for(int k = i ; k<j ; k++){

cost = Math.min(cost,m[i][k] + m[k+1][j] + p[i-1] \* p[k] \* p[j]);

}

m[i][j] = cost;

}

}

}

public class Main {

public static void main(String[] args)

{

Scanner sc = new Scanner(System.in);

int n = sc.nextInt();

MCM mcm = new MCM(n);

mcm.result(n);

for(int i = 1 ; i<=n ; i++)

{

for(int j = 1 ; j<=n ; j++)

{

System.out.print(mcm.m[i][j] + " ");

}

System.out.println();

}

}

}