#Birge-Vieta Method

n=int(input('Enter order of equation :'))

a=input("Enter coefficients:")

p=input('Enter initial approximation :')

i=int(input('Enter number of iterations required:'))

a=list(map(float,a.split()))

p=list(map(float,p.split()))

for k in range(0,i):

b=[]

c=[]

b.append(a[0])

c.append(b[0])

j=1

for j in range(1,n+1):

b.append(a[j]+p[k]\*b[j-1])

c.append(b[j]+p[k]\*c[j-1])

p.append(p[k]-b[n]/c[n-1])

print("Root of equation after iterations is " ,p[k+1])