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def coefficient(vari, k, i, n):

if i >= n - 1:

if i > n-1:

return 1

elif k != n-1:

return (vari - x[n-1]) / (x[k] - x[n-1])

else:

return 1

elif i != k:

return (vari - x[i]) / (x[k] - x[i]) \* coefficient(vari, k, i+1, n)

else:

return (vari - x[i+1]) / (x[k] - x[i+1]) \* coefficient(vari, k, i+2, n)

a = input("请输入若干个互异的节点的x轴坐标值：")

x = [float(i) for i in a.split(" ")]

b = input("请输入若干个互异的节点的y轴坐标值：")

y = [float(j) for j in b.split(" ")]

n = len(x)

sum = 0

v = float(input("请输入需要计算的节点的x轴坐标值："))

for k in range(n):

increase = (y[k]) \* coefficient(v, k, 0, n)

print("系数为:"+str(increase))

sum += increase

print("x=%f, y=%f" % (v, sum))