```
import pandas as pd
import numpy as np


x = np.array([45,50,55,60])
n = len(x)
y = [[0 for i in range(n)]
        for j in range(n)];
y[0][0] = 0.7071;
y[1][0] = 0.7660;
y[2][0] = 0.8192;
y[3][0] = 0.8660;


for i in range(1,n):
  for j in range(n-i):
    y[j][i] = y[j+1][i-1]-y[j][i-1]
y
```

```
[[0.7071, 0.05890000000000006, -0.005700000000000038, -0.0007000000000000339],
 [0.766, 0.053200000000000025, -0.006400000000000072, 0],
 [0.8192, 0.04679999999999995, 0, 0],
 [0.866, 0, 0, 0]]
```

```
val = 52
sum = y[0][0]
u = (val - x[0])/(x[1]-x[0])
u
```

```
1.4
```

```
def u_cal(u,n):
  temp = u
  for i in range(1,n):
    temp = temp*(u-i)
  return temp
def fact(n):
  f = 1
  for i in range(2,n+1):
    f = f*i
  return f


for i in range(1,n):
  sum += (u_cal(u,i)*y[0][i])/fact(i)
sum
```

```
0.7880032
```

Start coding or generate with AI.