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Practical Name: Langrange Interpolation Method

```
n = 2
x = 4.5
y[0] = 0
f[y[0]] = 1
y[1] = 1
f[y[1]] = 3
y[2] = 3
f[y[2]] = 55
L[i_, x_] := Product[If[i == k, 1, (x - y[k]) / (y[i] - y[k])], {k, 0, n}]
P[x_] = Simplify[Sum[L[i, x] * f[y[i]], {i, 0, 2}]]
2
4.5
0
1
1
3
3
55
136.
```