```
Clear [x, k, f, L, p]

f[x_] := Log[x]
xi = {1, 2, 3}
n = Length[xi];
For[k = 1, k ≤ n, k++,
   L_k[x_] = (∏_{j=1}^{k-1} (x - xi[[j]]) / (xi[[k]] - xi[[j]])) * (∏_{j=k+1}^{n} (x - xi[[j]]) / (xi[[k]] - xi[[j]]))];

p[x_] = ∑_{k=1}^{n} L_k[x] * N[f[xi[[k]]]];
Print["Lagrange polynomial p(x)=", p[x]]
Print["Simplified polynomial p(x)", Simplified[p[x]]]
Print["Approximate value at f at x=1.5 is", p[1.5]]
```

```
{1, 2, 3}

Lagrange polynomial p(x)=0. + 0.693147 (3 - x) (-1 + x) + 0.549306 (-2 + x) (-1 + x)

Simplified polynomial p(x)Simplified[0. + 0.693147 (3 - x) (-1 + x) + 0.549306 (-2 + x) (-1 + x)]

Approximate value at f at x=1.5 is0.382534
```