Case 1: f(1) is always 0.

Case 2: if P[q]==P[f(q-1)+1] then f(q)=f(q-1)+1.

Case 3: if P[q]≠P[f(q-1)+1] and f(q-1)≠0 then consider P[q] ?= P[f(f(q-1))+1] (Do it recursively)

Case 4: if P[q] ≠ P[f(q-1)+1] and f(q-1)==0 then f[q]=0.