PassMapping[*v*, *l*, *p*, *c*, *n*, *a*, *i*] gives the values that *a* should be mapped to after a 2–pass has been made at index *i*, from indices *v* with all indices *l*, passing over the list of strands *c*, in an *n*–crossing knot with a list of pairs *p*.

```
PassMapping[v_List, l_List, p_List,
    c_List, n_Integer, a_Integer, i_Integer] :=
  PassMapping[v, l, p, c, n, a, i] =
   If[Length[v ⋂ l[[ ;; 2]]] == 1,
    (*Pass ends connect to opposite
     sides of knot.*)
    (*Value a gets mapped to.*)
    Mod[If[MemberQ[v ⋃ Join @@ c, a],
       If[MemberQ[c[[1]], a],
        a + If[Mod[Abs@p[[l[[1]]] - i, 2 n] > 1, 1, -1],
        If[MemberQ[c[[2]], a], a +
           If[Mod[Abs@p[[l[[3]]] - i, 2 n] > 1, 1, -1],
         (l[[{2, 1, 4, 3}]] + {-1, 1, -1, 1})
          [[Position[l, If[OddQ[l[[1]] + l[[2]]],
              Total@v - a, a]][[1, 1]]]]],
       a], 2 n, 1]
     (*New sign of a.*)
     If[MemberQ[v ⋃ Join @@ c, a] ⋁ EvenQ@a,
      If[Mod[a - i, 2 n] ≤ 1 ⋁ OddQ@a ⋀ ¬ MemberQ[l, a],
       -Sign@p[[a]], 1],
      Sign@p[[a]]],
    (*Pass ends connect to same side of knot.*)
    (*Value a gets mapped to.*)
    Mod[If[MemberQ[v, a],
       SortBy[Delete[l, FirstPosition[l, #] & /@ v],
         Mod[#, 2] &][[Mod[a, 2] + 1]],
       a + If[MemberQ[Join @@ c, a], 0,
         If[MemberQ[v, l[[Ordering[Mod[a - l, 2 n, 1]][[
              1]]]], -1, 1]]], 2 n, 1]
     (*Sign of a.*)
     If[OddQ@a, Sign@p[[a]]
       If[MemberQ[v ⋃ Join @@ c, a], 1, -1], 1]];
```