

TwoPass@ $k$  gives all the knots that can be obtained

by applying one 2-pass to the knot  $k$ , which is given in modified DT form.

```
TwoPass@k_MDT := TwoPass@k = Block[{a, c, n = Length@k,
  p = List@@Build@k // (#T ∪ (Abs@Reverse@# Sign@#)T)T[[2]] &,
  v, y = {}},
Do[v = Abs@p[[Mod[{i, i + 1}, 2 n, 1]]];
If[Sort@Sign@p[[Mod[{i, i + 1}, 2 n, 1]]] == {-1, 1},
Do[If[Total@Mod[1, 2] == 2,
  c = Range@@@Partition[l + {1, -1, 1, -1}, 2];
If[-MemberQ[Join@@c, i], l = RotateLeft@l;
  c = Mod[Range@@@Partition[l + {1, -1, 1, 2 n - 1}, 2], 2 n, 1]];
If[Length[Join@@c] < 2 n - 4
  && v ∪ Join@@c == Abs@p[[Join@@c]] ∪ Mod[{i, i + 1}, 2 n, 1],
AppendTo[y, Convert[Build@k /. x_Integer =>
  PassMapping[v, p, l, c, n, Abs@x]]]],
{1, Sort@Join[#, v] & /@
  Subsets[
    Delete[Range[2 n], Mod[{i, i + 1}]T, 2 n, 1], {2}]]],
{i, 2 n}];
KnotSort[Minimal /@ y ∪ {}]]];
```