

`ValidColouring[k, e, s, g]` returns True if the knot  $k$ , given in modified DT form, can be coloured if it has an edge sequence given by the list  $e$ , crossing mappings given by the list  $s$ , and generator values given by the list  $g$  and False otherwise.

```
ValidColouring[k_MDT, e_List, s_List, g_List] :=  
ValidColouring[k, e, s, g] =  
Block[{v, w = List@@@List@@ToPD@k, n = Length@k},  
  v = Array[0 &, 2 n]; v[[e[[1]]] = g;  
  And@@Table[PermutationConjugation[v[[c[[1]]],  
    SortBy[w, Length[c ∩ #] &][[-1]]  
    // If[#[[3]] == Mod[#[[5]] + 1, 2 n, 1],  
      v[[c[[2]]],  
      InversePermutation@v[[c[[2]]]] &]  
    // If[v[[c[[3]]] == 0, v[[c[[3]]] = #; True, v[[c[[3]]] == #] &,  
    {c, s}]]];
```