

`ValidColouring[k, e, s, g]` gives `True` if the knot k , given in expanded planar diagram notation, can be coloured by edge generators, crossing mappings, and generator values given by the lists e , s , and g , respectively and `False` otherwise.

```
ValidColouring[k_List, e_List, s_List, g_List] :=  
ValidColouring[k, e, s, g] =  
Block[{v, n = Length@k}, v = Array[0 &, 2 n];  
  v[[e]] = g;  
  And @@ Table[PermutationConjugation[v[[c[[1]]]],  
    SortBy[k, 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}]]];
```