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,
         (*Check if derived value
          matches previously assigned value.*)
         v[[c[[3]]]] == #] &,
      {c, s}]];
```