Colourings[*k*, *m*] gives the number of colourings of the knot k,
which is given in modified DT form onto the permutation group S_m.

```
Colourings[k_MDT, m_Integer] :=
  Colourings[k, m] = If[k === MDT[],
    Length /@
     (Sort[Length /@ (List @@ PermutationCycles@#)[[1]]] &
        // GroupBy[Permutations@Range@m, #] &
       // Values),
    Block[{e = EdgeSequence@k, s, v,
      w = List @@@ List @@ ToPD@k},
     s = SortBy[If[Order[Position[Join @@ e, #[[1]]],
            Position[Join @@ e, #[[3]]]] == 1,
          #, Reverse@#] & /@
        (w //. (Max@# → Min@# & /@ w[[ ;; , {3, 5}]]))[[
          ;; , 2 ;; 4]],
      Max@Table[Position[Join @@ e, #[[j]]], {j, 2}] &];
     Total /@ Table[If[ValidColouring[w, e[[1]], s, g],
        1, 0],
       {p, (Length /@ (List @@ PermutationCycles@#)[[1]]
            // Sort) &
         // GroupBy[Permutations@Range@m, #] &
        // Values},
       {g, Tuples[p, Length@e[[1]]]}]]];
```