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dfsl-induction2  THM

⊢  For any graph
   ∀the_obj:GraphObject(the_graph), P:((V List)→Traversal→Prop).
   P(nil,nil)
   ⇒
   (∀L:V List, s:Traversal, i:V.
    paren(V;s)
    ⇒
    no_repeats(V+V;s) ⇒ P(L,s) ⇒ P(L @ [i],dfs(the_obj;s;i)))
   ⇒
   (∀L:V List.
    paren(V;dfsl(the_obj;L))
    & no_repeats(V+V;dfsl(the_obj;L))
    & P(L,dfsl(the_obj;L)))
  by (RepeatFor 5 (Analyze 0))
     THEN
     (Inst Thm: dfsl_DASH_induction1
      [the_graph
      ;the_obj
      ;λ₂l,s.
       paren(Vertices(the_graph);s)
       & no_repeats(Vertices(the_graph)+Vertices(the_graph);s)
       & P(l,s)])
     THEN
     (All Reduce)
     THEN
     EasyHyp
     THEN
     (Try
      ((Inst Thm: dfs_member [the_graph;the_obj;s;i]) THEN ExRepD
       THEN
       (HypSubst -1 0)))
     THEN
     (Try
      (BackThru
       Thm* ∀s',s3:(T+T) List.
            paren(T;s') ⇒ paren(T;s3) ⇒ paren(T;s3 @ s')
       {append_paren}))
     THEN
     (Try
      (RWO
       Thm* ∀l1,l2:T List.
            no_repeats(T;l1 @ l2)
            ⟺
            l_disjoint(T;l1;l2) & no_repeats(T;l1) & no_repeats(T;l2)
       {no_repeats_append_iff}
       0))
     THEN
     (Try ObviousConcl)
END
```