

- 397 (strings) If S is a bunch of strings, then $*S$ is the bunch of all strings formed by joining together any number of any strings in S in any order.
- (a) Define $*S$ by construction and induction.
 - (b) Prove $**S = *S$ (don't just use this law).

After trying the question, scroll down to the solution.

(a) Define $*S$ by construction and induction.

§ $nil, S, *S; *S : *S$
 $nil, S, B; B : B \Rightarrow *S : B$

Or

$nil, S; *S : *S$
 $nil, S; B : B \Rightarrow *S : B$

Or

$nil, *S; S : *S$
 $nil, B; S : B \Rightarrow *S : B$

Or

$nil, S, S; *S : *S$
 $nil, S, S; B : B \Rightarrow *S : B$

Or

$nil, S, *S; S : *S$
 $nil, S, B; S : B \Rightarrow *S : B$

(b) Prove $**S = *S$ (don't just use this law).

no solution given