```
rel_star_symmetric  THM

⊢  ∀T:Type, R:(T→T→Prop).
|  (Sym x,y:T. x R y) ⇒ (Sym x,y:T. x (R^*) y)
| by Unfold ‘sym‘ 0 THEN Reduce 0 THEN Auto
|
|
1. T : Type
2. R : T→T→Prop
3. ∀a,b:T. (a R b) ⇒ (b R a)
4. a : T
5. b : T
6. a (R^*) b
⊢  b (R^*) a
| by  Using [‘R1’,R^-1] (BackThruLemma ‘rel_star_monotonic‘) THEN Auto
|
|
|\
| 1. T : Type
| 2. R : T→T→Prop
| 3. ∀a,b:T. (a R b) ⇒ (b R a)
| 4. a : T
| 5. b : T
| 6. a (R^*) b
| ⊢  R^-1 => R
|   by ...
|
.\
. 1. T : Type
. 2. R : T→T→Prop
. 3. ∀a,b:T. (a R b) ⇒ (b R a)
. 4. a : T
. 5. b : T
. 6. a (R^*) b
. ⊢  b (R^-1^*) a
.   by ...
. Reduce 0 THEN Auto
END
```