

## cut apart

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The *cut apart* command introduces a new lemma into a proof, representing that lemma as a separate sub-goal, and thus causing branching in the proof tree. The lemma can be either keyed-in by the user into a dialogue box using the same mark-up as used in the specification, or if a predicate with identical textual appearance is in the same window, that predicate can be crossed. The *cut apart* command is applicable to a whole goal, and also to any predicate in a goal.

When applied to a whole goal, the second sub-goal has the lemma as a new first antecedent.

$$\frac{\vdash? p \quad | p \vdash?}{\vdash?}$$

When applied to a predicate within a goal, the second sub-goal has the lemma as an implicand to the inspected predicate.

$$\frac{\vdash? p \quad \vdash? p_1(p \Rightarrow p_2)}{\vdash? p_1(p_2)}$$

$$\frac{\vdash? p \quad | p_1(p \Rightarrow p_2) \vdash?}{| p_1(p_2) \vdash?}$$

The new predicate  $p$  may refer to the generic parameters and outermost declarations of the goal, but not to declarations introduced within  $p_1$ . In the dialogue box case, any previous response will still be there and can be reused or revised.

See also the *lemma* and *cut conjoined* and *cut disjointed* commands.

## 1. Tactic example

*“cut apart” “p”  $p_2$*

This example applies the *cut apart* command to the predicate  $p_2$  to introduce the predicate given by the string “p”. If the string argument is omitted from the tactic, it will be prompted for using a dialogue box.

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