

injectivity

/Reference manual/Z-related commands/Proof rule commands

The *injectivity* command is applicable to a name in a goal, where the name refers to an injection of a free type. It makes the injectivity constraint implied by the free type available as an antecedent in the sub-goal.

Given the general form of a free type,

$$\begin{aligned} f_1 &::= h_{1,1} \dots h_{1,m_1} \mid g_{1,1} \langle\langle e_{1,1} \rangle\rangle \dots g_{1,n} \langle\langle e_{1,n} \rangle\rangle \\ &\& \dots \& \\ f_r &::= h_{r,1} \dots h_{r,m_r} \mid g_{r,1} \langle\langle e_{r,1} \rangle\rangle \dots g_{r,n_r} \langle\langle e_{r,n_r} \rangle\rangle \end{aligned}$$

the injectivity constraint for an injection is

$$\forall x, y : e_{i,k} \mid g_{i,k} \ x = g_{i,k} \ y \bullet x = y$$

1. Tactic example

“injectivity” $e_1 \ e_2$

This example applies the *injectivity* command to expressions e_1 and e_2 .

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