

elimination

[/Reference manual](#)/[Z-related commands](#)/[Proof rule commands](#)

The *elimination* command performs proof steps that break up whole antecedent or consequent logical predicates into smaller antecedents and consequents. Those that generate a single sub-goal are as follows.

$$\begin{array}{ll}
 | \neg p \vdash? & \Longrightarrow \vdash? p \\
 | \neg e \vdash? & \Longrightarrow \vdash? e \\
 \vdash? \neg p & \Longrightarrow | p \vdash? \\
 \vdash? \neg e & \Longrightarrow | e \vdash? \\
 | p_1 \wedge p_2 \vdash? & \Longrightarrow | p_1, p_2 \vdash? \\
 | e_1 \wedge e_2 \vdash? & \Longrightarrow | e_1, e_2 \vdash? \\
 \vdash? p_1 \vee p_2 & \Longrightarrow \vdash? p_1, p_2 \\
 \vdash? e_1 \vee e_2 & \Longrightarrow \vdash? e_1, e_2 \\
 \vdash? p_1 \Rightarrow p_2 & \Longrightarrow | p_1 \vdash? p_2 \\
 \vdash? e_1 \Rightarrow e_2 & \Longrightarrow | e_1 \vdash? e_2 \\
 \vdash? \forall ds \mid p_1 \bullet p_2 & \Longrightarrow ds \mid p_1 \vdash? p_2 \\
 | \exists ds \mid p_1 \bullet p_2 \vdash? & \Longrightarrow ds \mid p_1, p_2 \vdash?
 \end{array}$$

Those that generate two separate sub-goals are as follows.

$$\frac{\vdash? p_1 \quad \vdash? p_2}{\vdash? p_1 \wedge p_2}$$

$$\frac{\vdash? e_1 \quad \vdash? e_2}{\vdash? e_1 \wedge e_2}$$

$$\frac{\mid p_1 \vdash? \quad \mid p_2 \vdash?}{\mid p_1 \vee p_2 \vdash?}$$

$$\frac{\mid e_1 \vdash? \quad \mid e_2 \vdash?}{\mid e_1 \vee e_2 \vdash?}$$

$$\frac{\vdash? p_1 \quad \mid p_2 \vdash?}{\mid p_1 \Rightarrow p_2 \vdash?}$$

$$\frac{\vdash? e_1 \quad \mid e_2 \vdash?}{\mid e_1 \Rightarrow e_2 \vdash?}$$

1. Tactic example

“elimination” $p_3 \ p_4$

This example applies the *elimination* command to predicates p_3 and p_4 .

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