

Common questions about defining an environment:

1. If a variable is bound in a formula, when I define an environment, do I need to assign this variable symbol to an element of the domain?

- Yes. When you define an environment, you need to assign EVERY variable symbol to an element of the domain, regardless of whether that variable is free or bound in a formula you are evaluating.

2. If a variable is bound in a formula, does the environment affect its value?

- No. An environment maps every variable symbol to a domain element. However, the environment only affects the values of free variables in a formula. We do not use the environment to evaluate any bound variable in a formula. The meanings of bound variables in a formula are specified by their quantifiers, not by the environment.

3. If a formula does not have any free variable, to evaluate the formula, is it sufficient to define an interpretation?

- Yes. In this case, an interpretation is sufficient to give the formula meaning. There is no need to define an environment.