

Lambda Notation

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A normal mathematical function can be written like this:

$$f(x) = x + 1$$

Sometimes it is desired to treat functions anonymously, called a “lambda”, “closure”.

In lambda calculus, it is common to use this notation:

$$f := \lambda x. x + 1$$

In path semantics, the notation for writing lambdas is the following:

$$f := \lambda(x) = x + 1$$

This follows the notation used in the Dyon programming language.

I prefer to use this in path semantics for the following reasons:

- The notation is more familiar for programmers
- The notation is closer to the normal mathematical form (replacing name by “ λ ”)
- It is easier to make lambdas more explicit, since in some cases, function currying is not permitted, where multiple arguments are needed