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Dear Tony,

since you may be writing foils or notes in the very near future, just a short letter to show how, under circumstances, you may save 50% in writing. I shall use your example.

Let 0 and ϕ solve

$$(*) \quad (\exists p, q :: p; x \leq x; q) \quad ;$$

let I be the left and right identity of $;$.
Then we observe

$$\begin{aligned} & \phi \\ = & \{I \text{ is left identity of } ;\} \\ & I; \phi \\ \leq & \{\phi \text{ solves } (*) \text{ with } p, q := I, 0\} \\ & \phi; 0 \\ \leq & \{0 \text{ solves } (*) \text{ with } p, q := \phi, I\} \\ & 0; I \\ = & \{I \text{ is right identity of } ;\} \\ & 0 \end{aligned}$$

(Now I have written down the above, I think I would have preferred "1" for the identity element.)

I like the above format for several reasons

- (0) for its brevity
- (1) for the way it displays the need for the identity element: if we are going to establish $0 = \phi$ by transforming ϕ into 0 by an appeal to (*) we must introduce and later again eliminate a semicolon
- (2) it uses all we know exactly once
- (3) it makes very explicit that we need a two-sided identity element.

If -as you suggested- many of the proofs are of this nature, this format may be exploited more widely. Good luck and have fun!

Thank you for your contributions to the last WG2.3 meeting! They were most illuminating; fortunately so, as they will have to carry almost all of the burden of justifying my presence as recipient.

"Listener"s continue to arrive. With your kind permission we shall abstain from sending them back over the Atlantic.

With love and greetings from both to both,
yours ever,

Edsger