Here is an informal explanation of the one-point laws. Let's start with

$$\exists v{:}\ D\cdot\ v=x \land b$$

and we are given $x{:}\ D$. Let's suppose D is nat . The existential quantification is an infinite disjunction.

$$(0=x \land b) \lor (1=x \land b) \lor (2=x \land b) \lor \ldots$$

We can use context in each of these disjuncts.

$$\begin{aligned}
&\ \ \ (0=x \land (\ b \text{ but replace } x \text{ with } 0\ ))\\
&\lor (1=x \land (\ b \text{ but replace } x \text{ with } 1\ ))\\
&\lor (2=x \land (\ b \text{ but replace } x \text{ with } 2\ ))\\
&\lor \ldots
\end{aligned}$$

Since x is in nat , exactly one of $0=x$, $1=x$, $2=x$, ... is $\top$ and the others are $\bot$. That's why it's called “one-point”. Let's suppose x is 1 .

$$\begin{aligned}
&\ \ \ (\bot \land (\ b \text{ but replace } x \text{ with } 0\ ))\\
&\lor (\top \land (\ b \text{ but replace } x \text{ with } 0\ ))\\
&\lor (\bot \land (\ b \text{ but replace } x \text{ with } 0\ ))\\
&\lor \ldots\\
=\quad & \bot \lor (\ b \text{ but replace } x \text{ with } 1\ ) \lor \bot \lor \ldots\\
=\quad & (\ b \text{ but replace } x \text{ with } 1\ )
\end{aligned}$$

Now the other one.

$$\forall v{:}\ D\cdot\ v=x \Rightarrow b$$

and we are given $x{:}\ D$. Let's suppose D is nat . The universal quantification is an infinite conjunction.

$$(0=x \Rightarrow b) \land (1=x \Rightarrow b) \land (2=x \Rightarrow b) \land \ldots$$

We can use context in each of these conjuncts.

$$\begin{aligned}
&\ \ \ (0=x \Rightarrow (\ b \text{ but replace } x \text{ with } 0\ ))\\
&\land (1=x \Rightarrow (\ b \text{ but replace } x \text{ with } 1\ ))\\
&\land (2=x \Rightarrow (\ b \text{ but replace } x \text{ with } 2\ ))\\
&\land \ldots
\end{aligned}$$

Since x is in nat , exactly one of $0=x$, $1=x$, $2=x$, ... is $\top$ and the others are $\bot$. That's why it's called “one-point”. Let's suppose x is 1 .

$$\begin{aligned}
&\ \ \ (\bot \Rightarrow (\ b \text{ but replace } x \text{ with } 0\ ))\\
&\land (\top \Rightarrow (\ b \text{ but replace } x \text{ with } 0\ ))\\
&\land (\bot \Rightarrow (\ b \text{ but replace } x \text{ with } 0\ ))\\
&\land \ldots\\
=\quad & \top \land (\ b \text{ but replace } x \text{ with } 1\ ) \land \top \land \ldots\\
=\quad & (\ b \text{ but replace } x \text{ with } 1\ )
\end{aligned}$$