Here are two different definitions of variable declaration with initialization.

\[
\text{var } x : T := e \cdot P = \exists x, x' : T \cdot x = e \land P
\]
\[
\text{var } x : T := e \cdot P = \exists x' : T \cdot (\text{substitute } e \text{ for } x \text{ in } P)
\]

Show how they differ with an example.

After trying the question, scroll down to the solution.
§  Let $e$ be $x$ and $P$ be $y'=x$. Then
\[ \exists x, x' \cdot x = e \land P \]
\[ = \exists x, x' \cdot x = x \land y' = x \]
\[ = \exists x, x' \cdot y' = x \]
\[ = \top \]
But
\[ \exists x' \cdot (\text{substitute } e \text{ for } x \text{ in } P ) \]
\[ = \exists x' \cdot (\text{substitute } x \text{ for } x \text{ in } y'=x ) \]
\[ = \exists x' \cdot y' = x \]
\[ = y' = x \]

The one-point law
\[ \exists x \cdot x = e \land P = (\text{substitute } e \text{ for } x \text{ in } P ) \]
applies only when $e$ does not mention $x$. So it does not apply in my example.