Suppose variable declaration is defined as

\[
\text{\texttt{var} } x: T \cdot P = \exists x: \text{undefined} \cdot \exists x': T \cdot P
\]

What are the characteristics of this sort of declaration? Look at the example

\[
\text{\texttt{var} } x: \text{int} \cdot \text{ok}
\]

After trying the question, scroll down to the solution.
According to this definition of local variable declaration, the variable initially has the value *undefined*, and has a final value of type *T*. In the example, suppose there is one nonlocal variable *y*. Then

\[
\text{var } x: \text{int} \cdot \text{ok} \\
= \exists x: \text{undefined} \cdot \exists x': \text{int} \cdot \text{ok} \\
= \exists x: \text{undefined} \cdot \exists x': \text{int} \cdot x' = x \land y' = y \\
= \exists x: \text{undefined} \cdot x: \text{int} \land y' = y \\
= \text{undefined: int} \land y' = y
\]

We cannot evaluate *undefined: int*. If it's ⊥, then *var x: int· ok* is unimplementable.