From the axioms of simple program stack theory (Subsection 7.1.0), prove
\[ top' = 3 \iff \text{push 3. push 4. push 5. pop. pop} \]
which says that when we push something onto the stack, we find it there later at the appropriate time.

Here are the axioms of simple program stack theory.

(0) \[ top' = x \iff \text{push } x \]
(1) \[ \text{ok} \iff \text{push } x. \text{ pop} \]

\[ \text{push 3. push 4. push 5. pop. pop} \]
use axiom (1) and monotonicity of .
\[ \Rightarrow \text{push 3. push 4. ok. pop} \]
use axiom (1) and monotonicity of .
\[ \Rightarrow \text{push 3. pop} \]
\[ \Rightarrow \text{push 3. ok} \]
\[ \Rightarrow \text{push 3} \]
\[ \Rightarrow \text{top' } = 3 \]
use axiom (0)