Let the variables be $x, y : \text{int}$. Write a program to refine specification $\neg \text{ok}$. Prove your refinement.

After trying the question, scroll down to the solution.
\[ \neg \text{ok } \iff x := x + 1 \]

Proof:

- \[ \neg \text{ok} \]
- \[ \neg (x' = x \land y' = y) \]
- \[ x' \neq x \lor y' \neq y \]
- \[ x' \neq x \]
- \[ x' = x + 1 \]
- \[ x' = x + 1 \land y' = y \]
- \[ x := x + 1 \]

expand \( \text{ok} \)
duality, inequality
generalization
direction, translation, exclusivity
specialization
definition of assignment