167 Express formally that specification R is satisfied by any number (including 0) of repetitions of behavior satisfying specification S.

After trying the question, scroll down to the solution.

§ Here are three answers:

$R \Leftarrow ok \lor (S.\,R)$

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$R \Leftarrow ok \lor S \lor (R.\,R)$

Taking the last answer:

$$
\begin{array}{ll r}
 & R & \text{given} \\
\Leftarrow & ok \lor S \lor (R.\,R) & \text{by monotonicity} \\
\Leftarrow & ok \lor S \lor (ok \lor S \lor (R.\,R).\; ok \lor S \lor (R.\,R)) & \text{distribution} \\
\Leftarrow & \quad ok \lor S \lor (ok.\,ok) \lor (ok.\,S) \lor (ok.\,R.\,R) \lor (S.\,ok) \lor (S.\,S) \lor (S.\,R.\,R) & \\
 & \lor (R.\,R.\,ok) \lor (R.\,R.\,S) \lor (R.\,R.\,R.\,R) & \\
= & ok \lor S \lor (S.\,S) \lor (R.\,R) \lor (S.\,R.\,R) \lor (R.\,R.\,S) \lor (R.\,R.\,R.\,R) &
\end{array}
$$

So now we have 0, 1, and 2 repetitions and some other stuff. Further applications of monotonicity and distribution give us more repetitions.