Proof by contradiction

Recall

- $S_0 = \emptyset$
- $S_n = S_{n-1} \cup \{n\}$ for $n \geq 1$.

Let $P(n)$ be the Boolean statement "$S_n = \{1, 2, \ldots, n\}$."

What does $P(1)$ assert? Is it true?

What does $P(2)$ assert? Is it true?