When doing DP how to Correctness proof?

\( \text{OPT}(i, w) \) what am I inducting on?

Formal predicate

\[ P(m) = \text{"My ALG correctly finds } \text{OPT}(i, w) \text{ for all } i, w \text{ s.t. } i + w = m \text{ \& \& } 0 \leq w \leq W.\"

We do strong induction on \( P(m) \).

\[ P(0) = \text{"We have calculated } \text{OPT}(0, 0) \text{ correctly.} \]