THEOREM $PRThm \Rightarrow PR$

⟨1⟩1. It suffices to assume $PRThm$ and prove PR.
  PROOF: Obvious.

⟨1⟩2. It suffices to assume $\forall\, \sigma \,:\, F_i$ for each i and prove $\forall\, \sigma \,:\, G$.
  PROOF: By ⟨1⟩1 (which asserts that it suffices to prove PR) and the definition of PR.

⟨1⟩3. It suffices to assume τ is an arbitrary behavior and prove G is true of τ.
  PROOF: By ⟨1⟩2, since $\forall\, \sigma \,:\, G$ means that G is true of all behaviors σ.

⟨1⟩4. F_i is true of τ, for all i.
  PROOF: By ⟨1⟩2 (which allows us to assume $\forall\, \sigma \,:\, F_i$).

⟨1⟩5. Q.E.D.
  PROOF: By ⟨1⟩3 it suffices to prove that G is true of τ, which follows from ⟨1⟩4 and the definition of $PRThm$ (which we may assume by ⟨1⟩1).