irreducible unitary representations of compact groups are finite-dimensional

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Defines	unitary representation of compact group has an irreducible subrepresentation
Defines	unitary group of a complex Hilbert space

Theorem - If $\pi \in rep(G, H)$ is a unitary representation of a compact topological group G in a Hilbert space H, then π has a finite-dimensional `http://planetmath.org/TopologicalGroupRepresentation`subrepresentation.

Corollary 1 - If π is `http://planetmath.org/TopologicalGroupRepresentation`irreducible, then H must be finite-dimensional.

Corollary 2 - π has an .