The 7 Hats Problem

History and provenance

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A simultaneous hat-guessing game

This is the complete-visibility version of a hat-guessing game: everyone sees everyone else's hat, all guesses are simultaneous, and at least one correct guess is required. Modern mathematical work studies much more general versions in which a graph specifies who sees whom [1].

The modular-sum construction in the accompanying solution is the standard complete-graph idea: n people can cover all n possible remainders when there are n colors. This is different from the often-publicized three-person game in which players may pass and the objective concerns a success probability.

What is known about this wording

I did not establish the inventor or first publication of the seven-person version. The cited research is a mathematical reference for the game family, not a claim of priority for this exact puzzle.

The page now says seven people total. "You and seven friends" would describe eight people and would not match the seven-person formulation solved here.

Sources

[1] Konstantin Kokhas, Aleksei Latyshev, and Vadim Retinsky, Cliques and Constructors in the Hats Game (2020), arXiv:2004.09605.

https://arxiv.org/abs/2004.09605

Sources checked September 7, 2026. A documented appearance is not necessarily the earliest appearance.