

# Problem of the Week

Proposed by Bernardo Ábrego and Silvia Fernández

September 29-October 6



There are 50 people in a party. Each person knows at least one other person. At some point a celebrity enters the party. Everybody knows the celebrity but the celebrity knows no one. You are new in town and get to the party after the celebrity. You don't know anybody, including the celebrity.

Trying to hide the fact that you don't read the tabloids, you want to figure out who the celebrity is by asking questions of the form "Do you know this person?" ("This person" could be anyone you choose from the party, and the answer to each question is either yes or no.)

How can you do this by asking at most 50 questions?

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This contest is sponsored by the Mathematics Department. Open to all CSUN students. Winner gets \$10 or an equivalent prize. All complete and correct solutions get a certificate. Type and send your solution before October 6th, 9:00PM to [silvia.fernandez@csun.edu](mailto:silvia.fernandez@csun.edu). All steps of the solution must be clearly justified. For rules, winners, solutions, and more information visit: [www.csun.edu/math/probweek](http://www.csun.edu/math/probweek)