

Shortlist 2008 N4

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TWITCH SOLVES ISL

Episode 42

Problem

Let n be a positive integer. Show that the numbers

$$\binom{2^n - 1}{0}, \binom{2^n - 1}{1}, \binom{2^n - 1}{2}, \dots, \binom{2^n - 1}{2^{n-1} - 1}$$

are congruent modulo 2^n to $1, 3, 5, \dots, 2^n - 1$ in some order.

Video

<https://youtu.be/7pe77MGepSc>

Solution

TO BE WRITTEN

check twitch stream