

UCLA Math Circle

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Abstract

More problems on modular arithmetic to accompany the UCLA Math Circle Intermediate-2 for Summer Session 2020, August 9nd.

More Problems on Modular Arithmetic

Problem 1

Calculate $3^{31} \pmod{7}$.

Problem 2

Calculate $2^{35} \pmod{7}$

Problem 3

The remainder of 2^{1000} divided by 13.

Problem 4

Solve $x^{103} \equiv 4 \pmod{11}$.

Problem 5

If a googolplex is $10^{10^{100}}$, what day of the week will it be a googolplex days from now? (Today is Sunday)

Problem 6

Find all positive integers x such that $2^{2^x+1} + 2$ is divisible by 17.