Homework 6: Greatest Common Divisor

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Problem 1.
Write down the solution for L6.4.

Problem 2.
It is known that

\[ 35! = 10333147966386144929 \times 66651337523200000000 \]

where \( \times \) is some digit. What digit is it?

Problem 3.
A positive integer \( n \) has the property that \( n^2 + 1 \) is divisible by 6. Find \( \gcd(n, 36) \) with a proof.