March 2007 M^6 Problem

Problem 1. (From February 2007)

Prove or disprove that the product of 2007 consecutive natural numbers cannot be the 2007th power of a natural number.

Problem 2.

Is this true that the arithmetic progression with the first term 1 and the difference 729 has infinitely many terms which are powers of 10?

Solutions for each problem (separately) can be submitted to Alexey Ovchinnikov, aiovchin@ncsu.edu, starting from noon March 18 until midnight March 31, 2007. Please, limit e-mail attachments to 200Kb.