MASSACHUSETTS MATHEMATICS LEAGUE
FEBRUARY 2004
ROUND 2: NUMBER THEORY

ANSWERS

A)_____

B)_____

C)_____

A) Given $(ABA)_9 = (BB0)_{11}$ where 0 is zero, and A and B are distinct natural numbers. Determine both possible values of A and B. Write the answers in the form (A, B).

B) Determine the units digit for the sum of $7^{2003} + 9^{2003}$.

C) How many positive even integers are divisors of $(12^3)(18^4)$?