MASSACHUSETTS MATHEMATICS LEAGUE
FEBRUARY 2005
ROUND 2 ELEMENTARY NUMBER THEORY

ANSWERS

A)_____

B)_____

C)_{___ ___}_

A) How many more positive factors are there for 5292 than for 520 ?

B) How many positive integers less than 200 have exactly three distinct (unrepeated) prime factors?

C) n = 1,111,200,311,112,004,111,1ab is a 22 digit number in base ten whose right-most digits are a and b. If n is divisible by 36 find the set of all possible values of the product of a and b.