MASSACHUSETTS MATHEMATICS LEAGUE
CONTEST 2 - NOVEMBER 2010
ROUND 4 ALG 1: FACTORING AND ITS APPLICATIONS

ANSWERS

A) _____

B) _____

C) _____

****** NO CALCULATORS ON THIS ROUND ******

A) For positive integers a, b and n, $x^2 - x - n = (x + a)(x - b)$.
If $n < 50$, compute the largest possible value of n.

B) Let $P = 280x^3y^2$.
Compute Q, if the greatest common factor of P and Q is $28x^2y^2$ and the least common multiple of P and Q is $3080x^3y^3z$.

C) Factor completely. $8A^2 - 7AB + 13B^2 - 3W^2 - 4B^2 - 4A^2 + 19AB - 13W^2$