

MASSACHUSETTS MATHEMATICS LEAGUE
CONTEST 4 - JANUARY 2017
ROUND 2 ALG 1: FACTORING AND/OR EQUATIONS INVOLVING FACTORING

ANSWERS

A) _____

B) _____

C) _____

A) For positive integer values of k , neither $10+k$ nor $10-k$ is prime, but they are positive and do have the same number of divisors. Determine all possible values of k .

B) Given: $A + B = 7$ and $A^2B - 21 = -AB^2$
Compute $A^2 - AB + B^2$.

C) Find all real values of x for which the harmonic mean of $2x+1$ and $\frac{1}{x-1}$ is $\frac{6}{5}$.

Recall: The harmonic mean of a and b is defined as $\frac{2ab}{a+b}$.