

MASSACHUSETTS MATHEMATICS LEAGUE
CONTEST 4 - JANUARY 2017
ROUND 6 ALG 1: ANYTHING

ANSWERS

A) _____

B) _____ (base 11)

C) _____

A) Compute the non-integer solution of $\frac{1}{T} = \frac{2T-1}{15}$.

B) If $3KK_{(\text{base } 8)} = 4KJ_{(\text{base } 7)}$, compute the sum of all possible values of K . Write your answer in base 11.

C) Both a and b , where $a < b$, have the property that twice each number, diminished by its reciprocal, is $\frac{1}{6}$. Let N denote the largest of $a+b$, $a-b$, ab , and $\frac{a}{b}$. Compute N .