

MASSACHUSETTS MATHEMATICS LEAGUE
CONTEST 1 - OCTOBER 2006
ROUND 4 ALG 1: FRACTIONS & MIXED NUMBERS

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

ANSWERS

A) _____

B) _____

C) (_____, _____)

A) Determine the positive difference between A and B .

$$A = 2 - \frac{1}{3 + \frac{1}{4}} \qquad B = \frac{\frac{1}{3} + \frac{1}{4}}{\frac{2}{3} - \frac{1}{4}}$$

B) Solve for x : $\left(\frac{1+x}{1-x}\right) = 4 - 3\left(\frac{1-x}{1+x}\right)$

C) The fraction $\frac{17}{25}$ can be expressed as the sum of three unit fractions, the first of which is $\frac{1}{2}$, that is $\frac{17}{25} = \frac{1}{2} + \frac{1}{A} + \frac{1}{B}$. Find (A, B) , where $0 < A < B$.