

**MASSACHUSETTS MATHEMATICS LEAGUE
CONTEST 1 - OCTOBER 2012
ROUND 4 ALG 1: FRACTIONS & MIXED NUMBERS**

ANSWERS

A) 1st: _____ 2nd: _____

B) _____

C) (_____ , _____)

- A) Dick and Joe try to guess how many jelly beans are in two large jars at the local grocery store.
Dick and Joe love jelly beans, but are bad at guessing.
Dick's guess is 60% less than the correct number in the first jar.
Joe's guess is 20% more than the correct number in the second jar.
The two jars together actually contain 1200 jelly beans.
Unbelievably, Dick's guess for jar #1 and Joe's guess for jar #2 actually add up to 1200.
How many jelly beans are there in each jar?

- B) Determine all values of x for which $Q = \frac{\frac{3}{x}}{\frac{1}{x+1} + \frac{2}{x-1}}$ is undefined.

- C) Consider both terms on the left-hand side of the equation to be mixed numbers (not products), where A and B are positive integers with no common factor (other than 1).

$$2\frac{A}{B} + 4\frac{A+1}{B} = 7.375$$

Compute the ordered pair (A, B) , where $A + B$ is a minimum.