

MASSACHUSETTS MATHEMATICS LEAGUE
CONTEST 1 - OCTOBER 2009
ROUND 4 ALG 1: FRACTIONS & MIXED NUMBERS

******* NO CALCULATORS IN THIS ROUND *******

ANSWERS

A) (_____ , _____ , _____)

B) _____

C) _____

A) A triathlete swims 2 miles in three hours, jogs 10 miles in four hours and bicycles 40 miles in $1\frac{1}{2}$ hours. The average rate for these three events lies between two consecutive integers A and B , closer to one of these values than the other. Let C denote the closer value. Determine the ordered triple (A, C, B) .

B) If x is 80% of y and y is $33\frac{1}{3}\%$ of w , then x^2 is $k\%$ of w^2 .
Determine the value of k to the nearest tenth.

C) If $\frac{a+b}{c} = 2$ and $\frac{a+c}{b} = 3$, compute $\frac{b+c}{a}$.