

**MASSACHUSETTS MATHEMATICS LEAGUE
CONTEST 6 - MARCH 2015
ROUND 4 ALG 1: ANYTHING**

ANSWERS

A) _____mph

B) (_____ , _____ , _____)

C) _____

- A) Yesterday I drove from San Antonio to Houston, Texas.
It took me one hour.
For 20 minutes, I drove at an average speed of 60 mph.
For the next 20 minutes, I increased my average speed by 50%.
For the last 20 minutes, I decreased my average speed to 50% of my average speed for the second 20 minute interval.
What was my average speed for the hour?
- B) The maximum value of a quadratic function $y = ax^2 + bx + c$ is 6 when $x = 2$. This function has a y-intercept of 4. Determine the ordered triple (a, b, c)
- C) The inequality $k \leq |x - 2| \leq 10$, where k is an integer, has exactly 10 integer solutions.
Compute k .