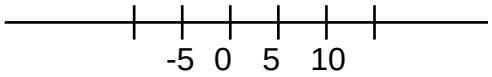
MASSACHUSETTS MATHEMATICS LEAGUE
CONTEST 6 - MARCH 2016
ROUND 4 ALG 1: ANYTHING

ANSWERS

A) _____

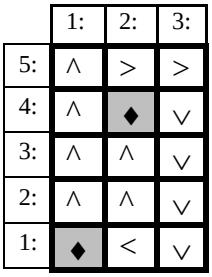
B) _____ mph

C) (_____ , _____)



A) *A* is the average of the largest 3-digit multiple of 5 and the smallest two-digit multiple of 5. If $\frac{7x-6}{4} = A$, compute the value of *x*.

B) It is 4 miles to my school. On a day when I feel particularly ambitious, I start out running, then slow to a walk for a while, and finish the trek jogging.
The distances I run, walk and jog are in a ratio of 8 : 1 : 3 respectively.
The rates at which I run, walk and jog are 12 mph, 3 mph and 6 mph, respectively.
Compute my average rate (in mph) over the 4 miles.



C) A light display starts in the lower left corner of a grid and spirals clockwise into the center, turning each light on, then off, in sequence. This pattern is illustrated for a 5 x 3 grid in the diagram above. The path follows the directional arrows, moving from the cell in row 1 column 1 to the cell in row 4 column 2.

If the same pattern is executed in a 10 x 10 grid, the 67th light toggled on and off is in row *R* and column *C*. Compute the ordered pair (R,C).