

MASSACHUSETTS MATHEMATICS LEAGUE
CONTEST 6 - MARCH 2017
ROUND 1 ALGEBRA 2: SIMULTANEOUS EQUATIONS AND DETERMINANTS
ANSWERS

A) (_____ , _____ , _____)

B) _____

C) _____ mph

A) Determine the unique ordered triple (x, y, z) which satisfies
$$\begin{cases} x - 2y + 4z = 2017 \\ -x + 2y = 3 \\ x + y = 0 \end{cases}.$$

B) Compute k such that
$$\begin{vmatrix} 14 & 3 & -7 & 8 \\ k & 5 & 11.6 & 3 \\ -6 & 9 & 3 & 5 \\ .8 & .6 & -.4 & -.3 \end{vmatrix} = 0.$$

C) Marty takes 9 minutes longer to walk a mile than Dick. Marty can walk 5 miles in the time it takes Dick to walk 8 miles. Compute Marty's walking rate in miles per hour.