MASSACHUSETTS MATHEMATICS LEAGUE
DECEMBER 2004
ROUND 3 ANALYTIC GEOM OF LINE

ANSWERS

A)_____

B)_____

C)_____

A) $\overline{AB}$ has endpoints A(1,0) and B(61, 45). Find the coordinates of the points on the segment that trisect it.

B) Let $y = 2x + b$ represent a line with x- and y-intercepts at P and Q respectively. Let O represent the origin. Find all possible values for b so that the area of ΔPQO is 100 square units.

C) If $k>0$, find the sum of the coordinates of the point on $x - 2y + k = 0$ closest to the origin. Express your answer in terms of k.