

MASSACHUSETTS MATHEMATICS LEAGUE
CONTEST 4 – JANUARY 2008
ROUND 6 ALG 1: ANYTHING

ANSWERS

A) _____

B) (_____, _____)

C) (_____, _____)

A) Earl is five years older than his favorite cousin. Thirteen years ago, he was twice his cousin's age. How old is Earl now?

B) Line L_1 has an x -intercept of 5 and a y -intercept of -2. Find the coordinates of the point on L_1 that is closest to $P(-1, 15)$.

C) Mixture #1 is 3 parts alcohol and 1 part water.
Mixture #2 is 2 parts alcohol and 1 part water.
 x quarts of mixture #1 and y quarts of mixture #2 are combined to make at least 6 gallons of a mixture that is 5 parts alcohol and 2 parts water.
Determine the ordered pair (x, y) for which $x + y$ is a minimum.

Note: 4 quarts = 1 gallon