

MASSACHUSETTS MATHEMATICS LEAGUE
CONTEST 6 – MARCH 2007
ROUND 4 ALG 1: ANYTHING

ANSWERS

A) water: _____ oz milk: _____ oz

B) _____

C) _____

- A) The recipe calls for 1% milk and only a half gallon of 4% milk is available. How many ounces of water and how many ounces of the available 4% milk must be mixed to satisfy the recipe's requirement of 3 cups of 1% milk?

NOTE: 1 gallon (gal) = 128 ounces(oz) = 4 quarts (qt) = 8 pints (pt) = 16 cups (c)

- B) Determine all values of a for which the distance between the x - and y -intercepts of the line

$$\frac{x}{3a} + \frac{y}{4a} = 1 \text{ is } 35.$$

- C) Let $N = (4^x + 4^x)(3^x + 3^x + 3^x)$.

Determine how many positive integer factors N has in terms of x , if x denotes a positive integer.