

**MASSACHUSETTS MATHEMATICS LEAGUE
CONTEST 1 - OCTOBER 2010
ROUND 3 ALG 1: LINEAR EQUATIONS**

ANSWERS

A) _____ lbs.

B) _____ units²

C) _____

******* NO CALCULATORS ON THIS ROUND *******

A) 8 lbs of a mixture of grass seed and lime is 72% lime. A second mixture of grass seed and lime is 57% lime. How many lbs of the second mixture when combined with the first mixture will produce a mixture that is 65% lime?

B) Given: $L = \left\{ (x, y) : \frac{x}{A} + \frac{y}{B} = 1 \right\}$

If $\begin{cases} A + B = 127 \\ A - B = 7 \end{cases}$, compute the area of the region bounded by L , the vertical line $x = 0$ and the horizontal line $y = 0$.

C) Given: $\frac{1}{2}y = \frac{2}{3}x + \frac{3}{5}$

Solving for x in terms of y , we get $x = \frac{Ay + B}{C}$, where $A < 0$ and A, B and C are integers.

Compute $\frac{ABC}{AB + AC}$