

**MASSACHUSETTS MATHEMATICS LEAGUE
CONTEST 2 - NOVEMBER 2013 ANSWERS**

Round 1 Algebra 2: Complex Numbers (No Trig)

- A) (25, 55) B) 5 C) (32, 92)

Round 2 Algebra 1: Anything

- A) 12 oz B) \$9.20 C) 6

Round 3 Plane Geometry: Area of Rectilinear Figures

- A) $\frac{77}{16}$ ($4\frac{13}{16}$ or 4.8125) B) 7 C) 576

Round 4 Algebra 1: Factoring and its Applications

- A) 99, -101 B) $(3x-5y)(2x+3y)$ C) $-2, \frac{29}{4}$ (or 7.25)

Round 5 Trig: Functions of Special Angles

- A) $8\sqrt{3}$ B) $-\frac{9\sqrt{3}}{32}$ C) $210^\circ < \theta < 330^\circ$

Round 6 Plane Geometry: Angles, Triangles and Parallels

- A) 216 B) 25 C) $18\sqrt{3}$

Team Round

- A) 6 D) (1, 3, 4, 4)
B) 63 only E) $150^\circ, 330^\circ$
C) $6-\sqrt{6}$ F) (3, 22), (4, 11) and (24, 1)