

**MASSACHUSETTS MATHEMATICS LEAGUE
CONTEST 6 – MARCH 2013 ANSWERS**

Round 1 Algebra 2: Simultaneous Equations and Determinants

- A) $\frac{3}{4}$ B) (3, 2) C) 4, -10

Round 2 Algebra 1: Exponents and Radicals

- A) 243 B) 27 C) $234 : 25$

Round 3 Trigonometry: Open

- A) 15 B) $\text{Arc cos}\left(-\frac{5}{16}\right)$ or C) 7.5
 $180 - \text{Arc cos}\left(\frac{5}{16}\right)$ [5/16 = 0.3125]

Round 4 Algebra 1: Anything

- A) (4, 8) B) 4 C) (4, 27)

Round 5 Plane Geometry: Anything

- A) 100 B) 143 C) (24, 6, 6)

Round 6 Algebra 2: Probability and the Binomial Theorem

- A) 40% B) $\frac{231}{16}$ C) (39, 256)

Team Round

- A) $4, -\frac{5}{6}$ D) (51, 113)

B) (1, 35, 2) E) $\left(D, \frac{1}{4}\right)$

C) -5 F) -10