

**MASSACHUSETTS MATHEMATICS LEAGUE
CONTEST 4 - JANUARY 2014 ANSWERS**

Round 1 Analytic Geometry: Anything

- A) $5\sqrt{2}$ B) $\frac{\sqrt{3}}{2}$ C) $(7, -12)$ and $(7, 4)$

Round 2 Alg: Factoring

- A) 27 B) 125 C) $y = 2x$ or $y = x - 2$

Round 3 Trig: Equations

- A) $-9, 10$ B) $\frac{7\pi}{24}, \frac{11\pi}{24}$ C) $\frac{\pi}{4}, \frac{7\pi}{12}, \frac{11\pi}{12}$

Round 4 Alg 2: Quadratic Equations

- A) 24 B) 18 C) $\frac{89}{16}$

Round 5 Geometry: Similarity

- A) $\frac{3}{4}$ B) $\frac{1}{5}, \frac{4}{5}$ C) $\frac{2\sqrt{3}}{3}$

Round 6 Alg 1: Anything

- A) 26 B) 13 C) $(0, 5.76)$

Team Round

- A) $x + 2y = 10$ D) 9, 10 and 15
B) $\frac{3}{4}$ only E) 1, 2, 3, 5, 6, 10, 15, 30
C) $-\frac{2\pi}{3}, -\frac{4\pi}{3}$ F) 14