

**MASSACHUSETTS MATHEMATICS LEAGUE
CONTEST 4 - JANUARY 2016 ANSWERS**

Round 1 Analytic Geometry: Anything

- A) 19 B) (16, 2) C) $-\frac{8\sqrt{7}}{3}$

Round 2 Alg: Factoring

- A) $3, -\frac{7}{2}$ B) (19,17), (11,7), (9,3) C) $(x^2 + y^2)(x-1)(x+1)$
in any order or $(x^2 + y^2)(-1+x)(1+x)$
in any order

Round 3 Trig: Equations

- A) π B) 330 C) 8

Round 4 Alg 2: Quadratic Equations

- A) 361 B) -64 C) (5, 2, 5) and (2, -1, -1)

Round 5 Geometry: Similarity

- A) 26.25 or $\left(\frac{105}{4}\right)$ B) 1 : 2 C) 25

Round 6 Alg 1: Anything

- A) 22 B) (-7,2,15) C) 900

Team Round

- A) $\sqrt{3}$ D) 7

- B) $-3 \leq x < 0$ or $x \geq 2$ E) $\frac{2\sqrt{3}}{3}$

- C) $\frac{\pi}{12}, \frac{5\pi}{12}, \frac{7\pi}{12}, \frac{11\pi}{12}$ F) 6