

**MASSACHUSETTS MATHEMATICS LEAGUE
CONTEST 5 – FEBRUARY 2015 ANSWERS**

Round 1 Alg 2: Algebraic Functions

- A) 4, 9 B) $(-13, -5)$ C) $(10, 4)$

Round 2 Arithmetic/ Number Theory

- A) 1332 B) 57 C) 1, 2 (order irrelevant)

Round 3 Trig Identities and/or Inverse Functions

- A) -1 B) $0, \frac{\pi}{4}, \pi, \frac{5\pi}{4}$ C) $\frac{\sqrt{5}-1}{2}$

Round 4 Alg 1: Word Problems

- A) \$150 B) 87 C) $\frac{7}{6}$

Round 5 Geometry: Circles

- A) $\frac{5}{4}$ B) $\frac{20}{3}$ C) 12

Round 6 Alg 2: Sequences and Series

- A) $f(x) = 4 - x$ B) $(-1, 3, -10)$ C) $(256, 175)$

Team Round

- A) 6 D) 4 and 7

- B) $(9, 3)$ E) $(8, 9, 2)$

- C) $\frac{212}{5}$ (or 42.4) F) $\frac{5}{9}, -\frac{49}{3}$ or equivalent

(Both answers are required, but order is irrelevant.)