

**MASSACHUSETTS MATHEMATICS LEAGUE
FEBRUARY 2006 ANSWERS**

Round 1: Algebraic Functions

- A) $8y^4 + 8y^2 + 3$ B) $1/8, 1/3$ C) $\frac{1}{2}$

Round 2: Elementary Number Theory

- A) 24 B) 286 C) (1, 5)

Round 3: Trig – Identities and Inverse Functions

- A) $\sqrt{x+1}$ B) $\csc \theta$ C) 14

Round 4: Algebra 1 – Word Problems

- A) 1896 B) 11 C) 21%

Round 5: Geometry - Circles

- A) 72 B) 2 or 12 C) $\frac{49\pi}{3}$

Round 6: Algebra 2 – Sequences and Series

- A) 480 B) 150 C) 40.5

Team Round

- A) 1, -1 B) 128 C) 135°
D) 34 E) 280 F) 57