

**MASSACHUSETTS MATHEMATICS LEAGUE
CONTEST 1 - OCTOBER 2013 ANSWERS**

Round 1 Geometry Volumes and Surfaces

- A) 5.4 or $\frac{27}{5}$ B) 1331π C) $72\sqrt{2}$

Round 2 Pythagorean Relations

- A) 56 B) $2\sqrt{21}$ C) $(5, 7)$

Round 3 Linear Equations

- A) $3x - 4y = -54$ B) -4 C) 11

Round 4 Fraction & Mixed numbers

- A) 27 days B) 48.6 mph or $\frac{243}{5}$ C) $-\frac{8B}{3B+3}$ (or equivalent)

Round 5 Absolute value & Inequalities (Interval notation is acceptable.)

- A) -2012 B) $x < -6$ or $x > \frac{4}{3}$ C) $\frac{65}{14} < x < 5$
(Comma allowed instead of “or”)

Round 6 Evaluations

- A) 272 B) 63 C) $17 : 4$

(abundant: 12, 18, 20 and 24)

Team Round

- A) $(4, 3, 26)$ D) 21

- B) 30 E) 6

- C) $(7, 12)$ [$x = 3, y = 4$] F) $(1, 4)$