

**MASSACHUSETTS MATHEMATICS LEAGUE
CONTEST 2 - NOVEMBER 2012 ANSWERS**

Round 1 Algebra 2: Complex Numbers (No Trig)

A) $(1, -3)$

B) 4

C) $-2 + 7i, 2 - 7i$

Round 2 Algebra 1: Anything

A) 199

B) 212

C) 2 and 3

Round 3 Plane Geometry: Area of Rectilinear Figures

A) 1 : 3

B) 204

C) 1116

Round 4 Algebra 1: Factoring and its Applications

A) 4

B) $\frac{4}{5}$

C) $-8 < x < -1$

Round 5 Trig: Functions of Special Angles

A) $-\frac{1}{2}$

B) $-\frac{3}{80}$

C) 19

(also acceptable: $\frac{-3}{80}, \frac{3}{-80}$)

Round 6 Plane Geometry: Angles, Triangles and Parallels

A) 3

B) 4.5°

C) 205

Team Round

A) (12, 144, 233)

D) 49

B) 20

E) 1

C) (216, 40)

F) 60 and 72 (Both are required.)