MASSACHUSETTS MATHEMATICS LEAGUE
JANUARY 2005 ANSWERS

Round 1:   A) (–4, 3) (6, 3) (0, –1)   B) (2,4) (4,2)   C) (2, –1)
            (in any order)

Round 2   A) 96 ft.   B) 1/3   C) –1, $1 \pm \sqrt{3}$

Round 3   A) $\pi/6$, $\pi/3$, $2\pi/3$, $5\pi/6$ B) 165   C) 6π

Round 4   A) $\sqrt{6}$ or $\dfrac{-\sqrt{6}}{3}$ B) (8, 3, 4)   C) 2

Round 5   A) 30   B) 38.2   C $\dfrac{200\sqrt{3}}{3}$

Round 6   A) 2, –4   B) y= –0.5x + 0.75   C) 2011

Team Round   A) (–1.5 , 4.5)   B) $x^3 (x^{2n} + 2x^n + 4) (x^{2n} - 2x^n + 4)$ C) 2.5

            D) 12   E) $40 + 5\sqrt{10}$ F) (9, –8) and (6, 1)