

**MASSACHUSETTS MATHEMATICS LEAGUE
CONTEST 6 – MARCH 2007 ANSWERS**

Round 1 Alg 2: Simultaneous Equations and Determinants

- A) $a = 2, b = -1/3$ B) -4 C) -6

Round 2 Alg 1: Exponents and Radicals

- A) 65 B) $x = -1, y = -5$ C) $a = 6, b = -2, c = 3$

Round 3 Alg2: Polynomial Functions

- A) $\frac{\sqrt{5}-1}{2}$ B) -2 C) 49.25

Round 4 Alg 1: Anything

- A) milk: 6 water: 18 B) ± 7 C) $2(x+1)(x+2)$
 $= 2x^2 + 6x + 4$ (or equivalent)

Round 5 Plane Geometry: Anything

- A) 168 B) 72 C) 1056

Round 6 Alg 2: Probability and the Binomial Theorem

- A) $\frac{34}{455}$ B) $\frac{455}{4}$ C) $\frac{13}{18}$

Team Round

- A) 14 B) 78 C) (-5, -10)
- D) (22, 2), (10, 6), (7, 10), (4, 26)
- E) $18\sqrt{3} - 6\pi$ F) 7