

MASSACHUSETTS MATHEMATICS LEAGUE
CONTEST 6 - MARCH 2008
ROUND 2 ALG1: EXPONENTS AND RADICALS

ANSWERS

A) _____

B) _____

C) (_____ , _____)

A) Given: $N = 2x^{-2/3}$

If $x = 64$, find y , where $N = 4^y$.

B) Simply $\sqrt{4 + \left(x - \frac{1}{x}\right)^2} \cdot \left(\frac{x}{3} + \frac{1}{3x}\right)^{-1}$ so that your answer is free of radicals and/or negative exponents.

C) Determine the ordered pair of positive integers (A, B) for which the quotient $\frac{\sqrt{49 - 8\sqrt{3}}}{\sqrt{21 + 12\sqrt{3}}}$ may be expressed as $\frac{A - B\sqrt{3}}{3}$.