

MASSACHUSETTS MATHEMATICS LEAGUE
CONTEST 3 - DECEMBER 2007
ROUND 4 ALG 2: LOG & EXPONENTIAL FUNCTIONS

ANSWERS

A) _____

B) $A =$ _____ $B =$ _____

C) _____

***** NO CALCULATORS ON THIS ROUND *****

A) Determine all possible values of x for which $(\log_3 x)^2 - \frac{7}{3} \log_5 125 - 6 \log_3 x = 0$

B) Given: $a = \log_{36}(8)$

In terms of a , find a simplified expression for $\log_{216}(48)$.

C) Compute all possible values of x for which $3^{3 \log_3 x + 1} - 2^{2 \log_2 x} = 2x^4$