

MASSACHUSETTS MATHEMATICS LEAGUE

DECEMBER 2005

ROUND 4 ALG 2: LOGS & EXPONENTIAL FUNCTIONS

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

ANSWERS

A) _____

B) _____

C) _____

A) Evaluate: $\log_5 625 + \log 0.001 - \log_9 3 + \ln(e)$

B) Solve for x: $\log_5 x + \log_5(x - 20) = 3$

C) Solve for x given $x > 1$ and $x^{\log_2(1/x)} = \frac{4}{x^3}$