**MASSACHUSETTS MATHEMATICS LEAGUE**
**CONTEST 3 - DECEMBER 2008**
**ROUND 4 ALG 2: LOG & EXPONENTIAL FUNCTIONS**
***** NO CALCULATORS ON THIS ROUND ****

**ANSWERS**

A) _____

B) _____

C) _____

A) Compute the numerical value of $49^{\log_7 3 - 4\log_7 2}$.

B) Compute <u>all</u> real values of $x$ for which $2^x = 2^{-x} - \dfrac{3}{2}$.

C) Compute <u>all</u> possible real values of $x$ for which $3^{1+5\log_3 x} - 4^{0.5+4\log_4 x} + 2^{3+2\log_2 x} = 12x^3$.