MASSACHUSETTS MATHEMATICS LEAGUE
FEBRUARY 2005
ROUND 6 ALGEBRA 2: SEQUENCES & SERIES
ANSWERS

A)_____

B)_____

C)_____

A) Find the 2005^{th} term of an arithmetic sequence whose third term is –2000 and whose fifth term is –1996.

B) For an arithmetic sequence a and a geometric sequence g, $a_9 = g_1$ while $a_{81} = g_3$. If $a_0 = 0$ and $g_1 = 6$ find all possible values for $a_2 + g_2$ as improper fractions.

C) At the beginning of each year Shauna adds \$100 to her bank account; at the end of each year the bank adds 8% interest to the account. At the beginning of every month Will adds \$20 to a shoe box in his closet. If each began with no money when they made their first deposits Jan 1 1990, who had the greater amount after interest was paid to Shauna at the end of 2004- and how much more did they have rounded to the nearest dollar?