

**MASSACHUSETTS MATHEMATICS LEAGUE**  
**CONTEST 5 – FEBRUARY 2008**  
**ROUND 6 ALG 2: SEQUENCES AND SERIES**

**ANSWERS**

A) \_\_\_\_\_

B) \_\_\_\_\_

C) \_\_\_\_\_

A)  $3^2, 5^2, 7^2$  are the 2<sup>nd</sup>, 6<sup>th</sup> and 12<sup>th</sup> terms in an arithmetic sequence. What is the 14<sup>th</sup> term?

B) Find the first term in the arithmetic sequence  $-2, 5, 12, 19, \dots$  that is larger than the 10<sup>th</sup> term in the geometric sequence  $-0.75, 1.5, -3, 6, \dots$

C) Given: 
$$\begin{cases} A_{N+2} = 2A_{N+1} + 3A_N & \text{for } N \geq 1 \\ A_2 = 4 \\ A_5 = 17 \end{cases}$$
 Compute  $A_1 + A_6$ .