

**MASSACHUSETTS MATHEMATICS LEAGUE
CONTEST 5 - FEBRUARY 2015
ROUND 6 ALG 2: SEQUENCES AND SERIES**

ANSWERS

A) $f(x) =$ _____

B) (_____ , _____ , _____)

C) (_____ , _____)

A) $f(x) = c_0 + c_1x + c_2x^2$

Find $f(x)$ under the following conditions: $f(0) = 4, f(1) = 3$ and $f(2) = 2$

B) The series $S = \sum_{n=a}^{n=b} (3n-5)$ generates a sum of 3 negative numbers and 2 positive numbers.

Compute the ordered triple (a, b, S) .

C) The simplified ratio of the sum of the terms of the infinite geometric sequence $3, -\frac{9}{4}, \frac{27}{16}, \dots$ to the sum of the first four terms of the sequence is $A : B$. Compute the ordered pair (A, B) .