

MASSACHUSETTS MATHEMATICS LEAGUE

FEBRUARY 2004

ROUND 6: SEQUENCES & SERIES

ANSWERS

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

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

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

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A) In an arithmetic sequence of ten terms, the tenth term is 14, and their sum is 5. Find the second term.

B) The second term of a geometric sequence is 12, and the sixth term is  $1024/27$ . Find the first term.

C) The six terms  $2x - 3$ ,  $t$ ,  $7 - 12y$ ,  $x + 3$ ,  $3y - 4$ ,  $x + 12$  are in arithmetic sequence. Find the ordered triple  $(x, y, t)$ .