

MASSACHUSETTS MATHEMATICS LEAGUE  
OCTOBER 2004  
ROUND 5 INEQUALITIES & ABSOLUTE VALUE

ANSWERS

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

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

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

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A) Find all real  $x$  for which  $(x^2 - 1)(x + 1) > (x^2 - 1)(x - 1)$

B) If the solution for  $(b + ax - x^2)(14 - 2x) > 0$  is  $x > 7$  or  $-5 < x < 2$ , find  $a+b$

C) How many lattice points (points with two integer coordinates) are strictly inside the region bounded by

$$x = 0, \ y = 0, \text{ and } |2x + 2y - 9| = 7$$