

**MASSACHUSETTS MATHEMATICS LEAGUE  
CONTEST 1 - OCTOBER 2015  
ROUND 5 INEQUALITIES & ABSOLUTE VALUE**

**ANSWERS**

A)  $k =$  \_\_\_\_\_

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

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

A) For what integer  $k$  does the inequality  $0 < |x| < k$  have exactly 20 integer solutions?

B) Solve for  $x$  over the reals.  $|x - |2x + 3|| = 1 - x$

C) Solve for  $x$  over the reals.  $\frac{2}{x+6} - \frac{3}{5-x} \geq 0$