Name:_____ Date:_____

Section 7.4 Relations with Absolute Value Equations

Contest	Year	Number	Answer

What are both values of "x" which satisfy $x^2+5|x|-6=0$? (CNML 1987 1-3)

What is the area of the region bounded by the graph of $|x+y|+|x-y|=4$ (CNML 1987 2-5)

14. What is the area of the region defined by the inequality $|3x-18|+|2y+7|\leq 3$?

(A) 3 (B) $\frac{7}{2}$ (C) 4 (D) $\frac{9}{2}$ (E) 5

7. What is the area enclosed by the graph of $|3x|+|4y|=12$?

(A) 6 (B) 12 (C) 16 (D) 24 (E) 25

14. What is the area of the region defined by the inequality $|3x-18|+|2y+7|\leq 3$?

(A) 3 (B) $\frac{7}{2}$ (C) 4 (D) $\frac{9}{2}$ (E) 5

409. Solve for all real values of y: $|3y + 7| = |2y - 1|$. (MATHCOUNTS 1990)

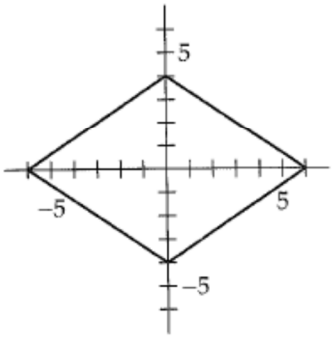
410. Find the area of the region determined by the system

$$\begin{aligned} y &\geq |x| \\ y &\leq -|x + 1| + 4. \end{aligned}$$

(MATHCOUNTS 1992)

411. Find the coordinates of the points of intersection of the graphs of the equations $y = |2x| - 2$ and $y = -|2x| + 2$. (MATHCOUNTS 1989)

412. Find the equation whose graph is as shown at the right. (MATHCOUNTS 1989)



413. Prove that $\lfloor 2x \rfloor + \lfloor 2y \rfloor \geq \lfloor x \rfloor + \lfloor y \rfloor + \lfloor x + y \rfloor$ for all real x and y.

Find the area of the region bounded by the graph of the equation: $|2x-2|+|y-2|=6$

$|x+2|+|y-3|=1$ is an equation for a square. How many units are in the lengths of its diagonals?

What is the number of square units in the area of the region determined by the following system:
$|x|+|y|\leq 4 \; ; \quad y \leq 0$