

## Absolute Value and Piecewise

Date \_\_\_\_\_ Period \_\_\_\_\_

**Solve each equation.**

1)  $6|x+6| - 2 = 64$   
 $\{5, -17\}$

3)  $6|r-4| - 6 = 12$   
 $\{7, 1\}$

5)  $2|4+p| + 4 = 10$   
 $\{-1, -7\}$

7)  $9|-2n-2| - 2 = 106$   
 $\{-7, 5\}$

9)  $-6 + 3|3x+5| = -6 \left\{ -\frac{5}{3} \right\}$

2)  $4|6a| - 4 = -100$   
No solution.

4)  $7\left|\frac{n}{7}\right| + 2 = 5$   
 $\{3, -3\}$

6)  $8 - 5|2x| = -62$   
 $\{7, -7\}$

8)  $7|4m+8| + 1 = -27$   
No solution.

10)  $-10|2x+5| - 4 = 86$   
No solution.

**Solve each inequality.**

11)  $3 - 3|-6n| \geq 75$   
No solution.

13)  $10|-6+m| + 1 \leq 71$   
 $-1 \leq m \leq 13$

15)  $1 + 10|n-10| < 31$   
 $7 < n < 13$

17)  $|6n-5| + 6 \geq -65$   
{ All real numbers. }

19)  $6|2n+10| - 3 > 21$   
 $n > -3$  or  $n < -7$

12)  $5|6x| - 6 > 114$   
 $x > 4$  or  $x < -4$

14)  $-9|n+8| + 8 \leq 35$   
{ All real numbers. }

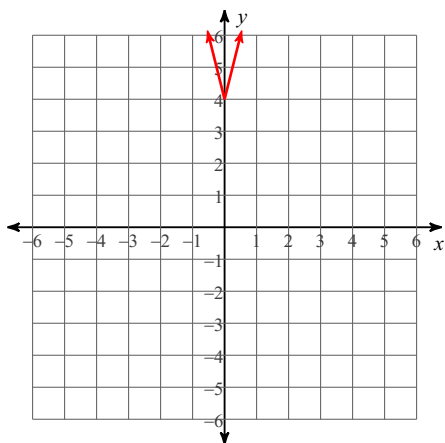
16)  $-6\left|\frac{x}{5}\right| + 2 > -4$   
 $-5 < x < 5$

18)  $-6|6x+1| - 8 < -38$   $x > \frac{2}{3}$  or  $x < -1$

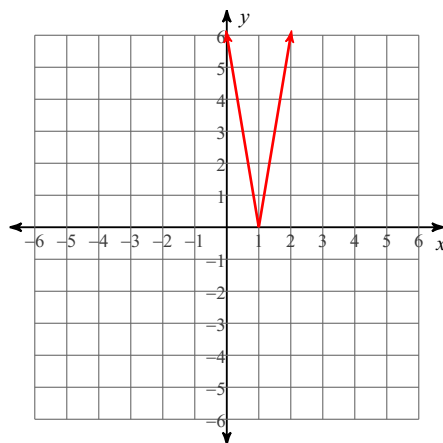
20)  $-5 - 3|9-3a| \geq -41$   
 $-1 \leq a \leq 7$

**Graph each equation. Rewrite the odds as piecewise functions.**

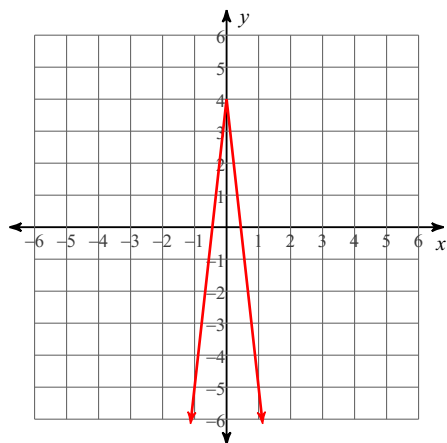
21)  $y = 2|2x| + 4$



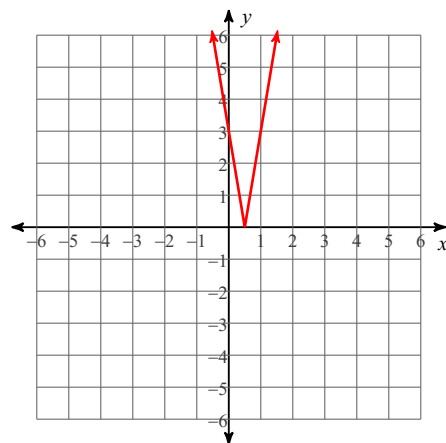
22)  $y = 2|-3x+3|$



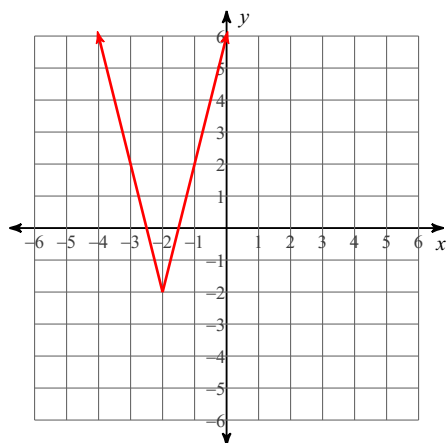
$$23) y = -3|-3x| + 4$$



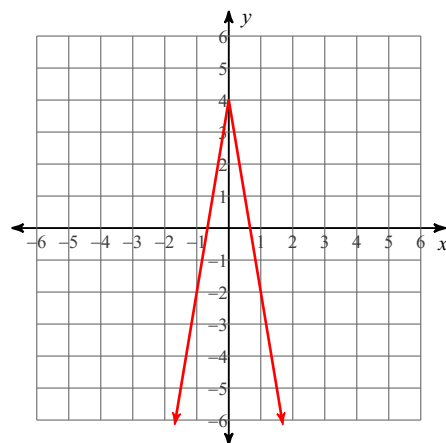
$$24) y = 3|2x - 1|$$



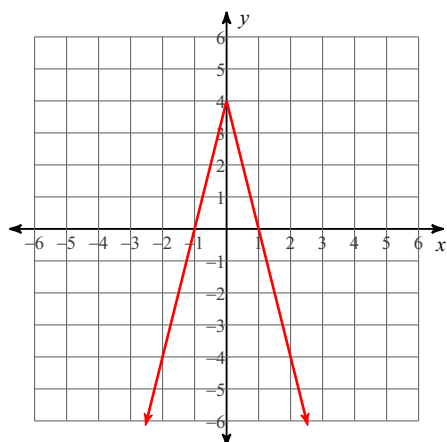
$$25) y = 2|2x + 4| - 2$$



$$26) y = -2|-3x| + 4$$



$$27) y = -2|2x| + 4$$



$$28) y = 3|3x + 3|$$

