

Algebra 1
Unit 6 Review

Name _____ Date: _____

Part 1: Factoring

For 1-4; Factor each using the Difference of Squares. If you cannot factor using DOS, write Prime.

1. $9x^2 - 144$

2. $196x^4 - 16y^3$

3. $81x^6 - 9$

4. $4x^2y^4z^8 - 16y^2$

For 5-8; Factor each using the AC Method

5. $6x^2 - 5x - 6$

6. $4x^2 + 15x + 9$

7. $2x^2 + 3x - 35$

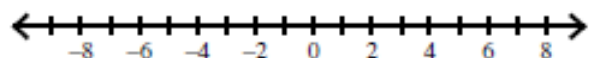
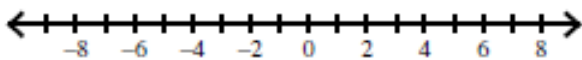
8. $7x^2 - 27x - 4$

Part 2: Inequalities

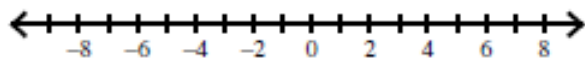
For 9-14, Solve and Graph each of the following inequalities

9. $2(x + 3) \geq 4(x - 1)$

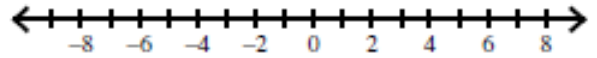
10. $5x + 24 > 2(x - 9) - 3x$



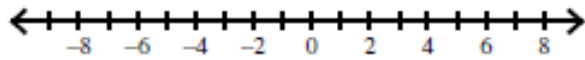
$$11. 6(x + 6) - 2 \leq 34 + 6x$$



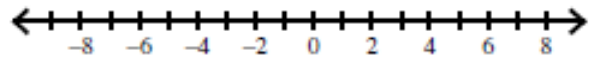
$$12. -5x - 42 > -2 - (x + 4)$$



$$13. 27 - 8x > -8(x - 4) + 3$$



$$14. -9(x - 5) + 9 < 3x + 42$$

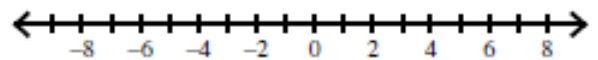
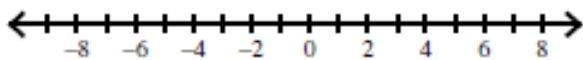


Part 3: Compound Inequalities

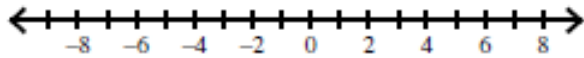
For 15-18; Solve and Graph each of the following compound inequalities

$$15. -4x - 11 > 5 \text{ OR } 8x - 7 > 9$$

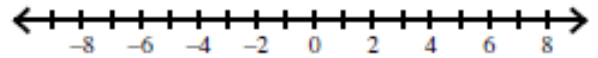
$$16. -2x - 1 < -17 \text{ OR } 1 - x \geq 4$$



$$17. -31 < 9x + 5 < 32$$

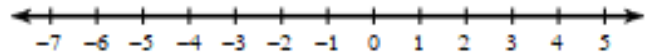
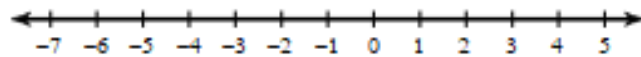


$$18. -24 \leq 2x - 10 < -6$$



$$19. 4n - 5 < 7n - 2 \leq 10n - 5$$

$$20. 8x + 1 < 10x + 5 \text{ OR } 9x + 5 \leq 3x - 7$$



For 20-23; Solve each absolute value equation

$$20. |x + 1| = 6$$

$$21. |6c - 18| = 30$$

$$22. -4|2w + 6| = -32$$

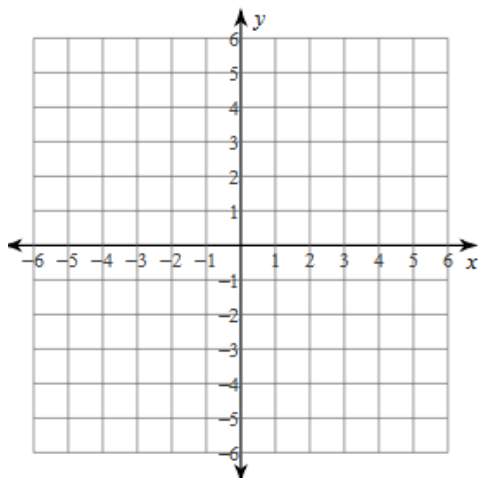
$$23. 5\left|\frac{x}{2} + 4\right| = -10$$

Part 5: Graphing on a 2 dimensional plane

For 24-27; Graph the absolute value equation

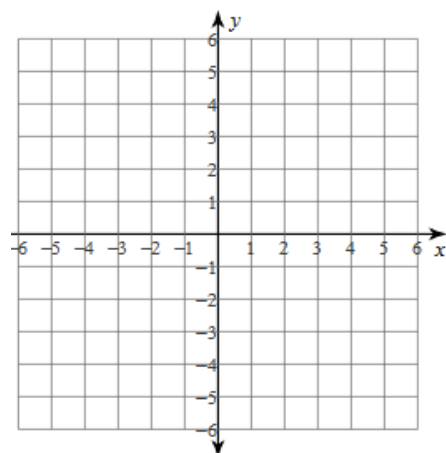
24.

$$y = |x + 4|$$

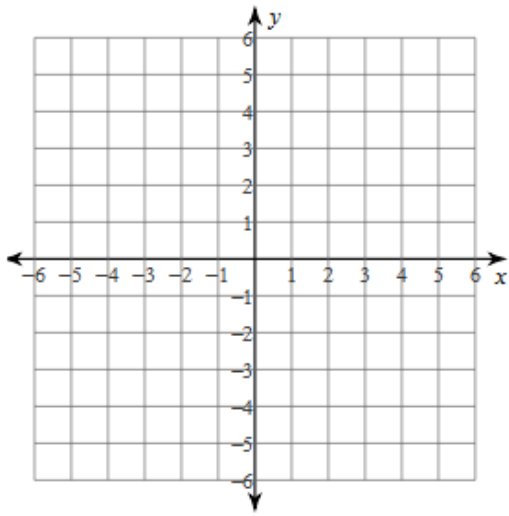


25.

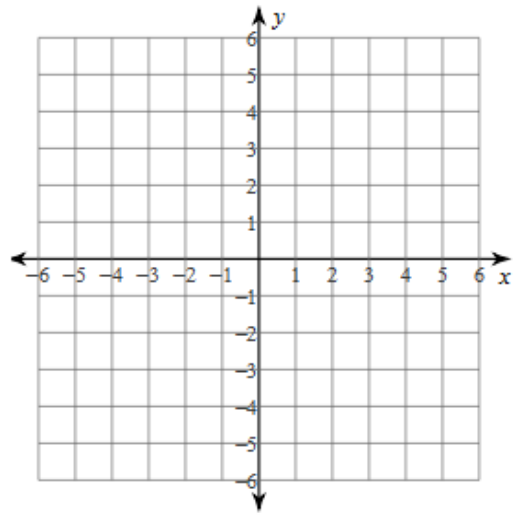
$$y = |x| - 3$$



26. $y = |x - 3| - 1$



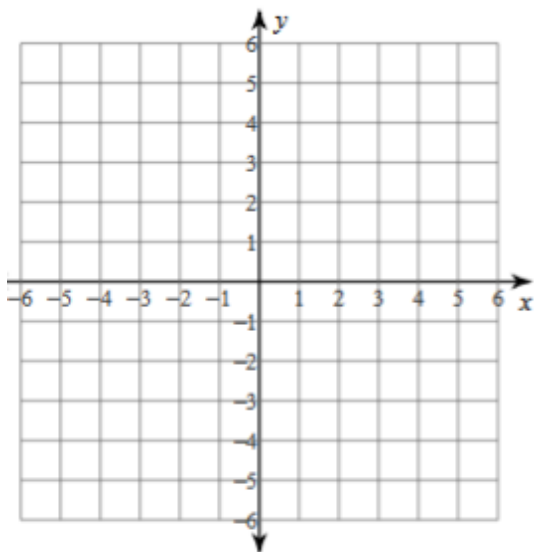
27. $y = -|x + 1|$



For 29 and 30; Graph the inequality

29.

$$y \geq \frac{7}{2}x + 3$$



30.

$$3x - y \leq 3$$

