

Name: _____
PC: Solving Non-Linear Inequalities

Date: _____
Ms. Loughran

For each inequality below, express its solution set 3 ways:

- (a) As a number line.
- (b) Using set-builder notation.
- (c) Using interval notation.

1. $(x+2)(x-2) < 0$

2. $(x+3)(2x+1) \geq 0$

3. $(2x+1)(3x-2) > 0$

4. $x^2 - 7x + 10 < 0$

5. $20 - c - c^2 \geq 0$

6. $s^2 + 10 < 11s$

7. $d^2 + 6d > 0$

8. $2t^2 - 6t - 8 < 0$

9. $y^2 - 8y \leq 2y + 24$

10. $x^2 \geq 16$

11. $w^2 + 5w < 3 - w^2$

12. $33x < 4x^2 + 8$

13. $3(u^2 - u) \geq u^2 + 9$

14. $13(c+3) \leq 2(c^2 - 3)$

15. $3k^2 + 24k > -36$

16. $5 - 4x - x^2 < 0$

17. $u + 20 \geq u^2$

18. $(x-3)(2-x)(x+2) \geq 0$

19. $(x+3)(x+2)(x-1) \geq 0$

20. $(x-3)(x+2)^2 \leq 0$

21. $(x-1)^2(x+3) > 0$

22. $4x^3 \geq 4x^2 + 24x$

23. $5x^3 \leq 5x$

24. $y^3 + y^2 - 6y \leq 0$