

Algebra II Worksheet #4 Unit 1 _____

Express each of the following sets using interval notation.

1. $\{x \mid -2 < x < 3\} = \underline{\hspace{2cm}}$

2. $\{x \mid x \leq 5\} = \underline{\hspace{2cm}}$

3. $\{x \mid x > 2\} = \underline{\hspace{2cm}}$

4. $\{x \mid -4 \leq x \leq -1\} = \underline{\hspace{2cm}}$

Solve each of the following for x . Represent the solution set as an interval or the union of intervals and sketch its graph.

5. $3x + 7 > 1$ and $-2x + 8 > 5$

6. $-4x + 10 \leq 1$ or $6x + 5 \leq 2$

7. $8x - 5 \geq 7$ and $4 - 3x \leq 10$

8. $-4x - 1 < 0$ or $-6x + 3 > 18$

9. $5x - 6 < 9$ and $3x + 1 > 13$

10. $8x - 10 \geq 18$ or $9x + 2 \geq 23$

11. $3x + 5 > 2$ and $-10x + 27 \geq 2$

12. $2x - 5 < 1$ or $3x + 2 > 5$

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Solve each of the following for x . Represent the solution set as an interval or the union of intervals and sketch its graph.

13. $2x + 5 < 13$ and $3x - 1 > -10$

14. $-4x - 6 \leq 0$ and $6x - 12 \leq 0$

15. $3x + 5 < 12$ and $-3x + 2 \leq 10$

16. $7x + 15 > 1$ and $-5x + 3 > 0$

17. $4x - 7 > 9$ and $-3x + 1 > 4$

18. $9x - 1 \leq 5$ and $4 - 5x \geq 10$

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Solve each of the following for x . Represent the solution set as an interval or the union of intervals and sketch its graph.

19. $2x - 7 > 10$ or $x + 8 < 5$

20. $5x + 9 \leq 1$ or $12 - 3x \leq 0$

21. $8x + 4 < 16$ or $9x - 21 \geq 0$

22. $x + 2 \leq 8$ or $1 - 3x \geq 10$

23. $7x - 5 \leq 8$ or $4x + 2 \geq 12$

24. $8x < 20$ or $2 - 8x \leq 10$