

**Solve each of the following.**

**Name** \_\_\_\_\_

Put answers in set building notation and graph the solution.

1.  $\frac{k}{3} - 11 < -5$

1. { \_\_\_\_\_ }

1. \_\_\_\_\_

2.  $\frac{y}{2} + 9 < 4$

2. { \_\_\_\_\_ }

2. \_\_\_\_\_

3.  $\frac{w+9}{5} > 6$

3. { \_\_\_\_\_ }

3. \_\_\_\_\_

4.  $7m - 3(m - 5) \leq 11$

4. { \_\_\_\_\_ }

4. \_\_\_\_\_

5.  $2(3t - 7) + 4t < -50$

5. { \_\_\_\_\_ }

5. \_\_\_\_\_

6.  $\frac{z}{5} + 3 \geq -2$

6. { \_\_\_\_\_ }

6. \_\_\_\_\_

Put answers in set building notation and graph the solution.

7.  $8m - 8 \geq 12 + 4m$

7. { \_\_\_\_\_ }

7. \_\_\_\_\_

8.  $\frac{3w - 6}{5} > 10$

8. { \_\_\_\_\_ }

8. \_\_\_\_\_

9.  $\frac{1}{2}t - \frac{1}{3}t > -1$

9. { \_\_\_\_\_ }

9. \_\_\_\_\_

10.  $\frac{3}{5}a - \frac{1}{3} < -\frac{4}{5}a + \frac{1}{2}$

10. { \_\_\_\_\_ }

10. \_\_\_\_\_

11.  $2(7t - 3) + 5t < -12$

11. { \_\_\_\_\_ }

11. \_\_\_\_\_

12.  $\frac{1}{3}t - \frac{3}{4} > \frac{1}{2}t + \frac{2}{3}$

12. { \_\_\_\_\_ }

12. \_\_\_\_\_

13.  $\frac{3}{7}(7t - 28) + 5t < \frac{-2}{9}(18t - 27) + 7$

13. { \_\_\_\_\_ }

13. \_\_\_\_\_

14.  $10 - 2p > 12$  and  $7p < 4p + 9$

14. { \_\_\_\_\_ and \_\_\_\_\_ }

14. \_\_\_\_\_

15.  $4t + 8 \geq t + 6$  or  $7t - 14 \geq 2t - 4$

15. { \_\_\_\_\_ or \_\_\_\_\_ }

15. \_\_\_\_\_

16.  $3k + 1 > 10$  and  $k \neq 6$

16. { \_\_\_\_\_ and \_\_\_\_\_ }

16. \_\_\_\_\_

Put answers in set building notation and graph the solution.

17.  $-5 \leq 3d + 1 < 4$

17. { \_\_\_\_\_ and \_\_\_\_\_ }

17. \_\_\_\_\_

18.  $|5y + 13| \geq -17$

18. { \_\_\_\_\_ }

18. \_\_\_\_\_

19.  $|2x + 5| < 19$

19. { \_\_\_\_\_ }

19. \_\_\_\_\_

20.  $|r - 7| \leq 13$

20. { \_\_\_\_\_ }

20. \_\_\_\_\_

Put answers in set building notation and graph the solution.

21.  $\left| \frac{2j+5}{3} \right| \geq 2$

21. { \_\_\_\_\_ }

21. \_\_\_\_\_

22.  $|3x+17| \geq 5$

22. { \_\_\_\_\_ }

22. \_\_\_\_\_

23.  $|4x+7| < -14$

23. { \_\_\_\_\_ }

23. \_\_\_\_\_

**Matching** - Match the **best** response to each statement.

<u>Statements</u>	<u>Responses</u>
1. _____ $ 2x + 3  \geq -5$	A. Defined as a measure of magnitude, results in non-negative numbers being reported.
2. _____ $w \neq 7$	B. <u>Example</u> of absolute value inequality that will be written as a compound “and” statement and will have a traditional answer.
3. _____ The “and” compound inequality	C. This is done anytime multiplication or division by a negative number occurs.
4. _____ Absolute value	D. The <u>graphical solution</u> that is interpreted as the only numerical values capable of solving both statements in an “and” compound inequality.
5. _____ The “or ” compound inequality	E. Defined as the number in front of a variable.
6. _____ $ 11x + 5  < -19$	F. Restricted value - means that any number other than that particular one can be used.
7. _____ Changing the direction of an Inequality sign	G. Used to signify that there are too many solutions to list, but all those solutions will share some notable characteristic, e.g. $\{x \mid x > 5\}$
8. _____ Significance of shaded region for “or ” statements	H. This is the result when a number is multiplied by itself.
9. _____ $ 5x + 43  \geq 67$	I. <u>Example</u> of absolute value inequality that will have <b>R</b> - “all reals” as a solution
10. _____ $ 9x - 8  < 23$	J. Usually has a solution that graphs as diverging arrows, on occasion will have an answer as <b>R</b> , statement that <b>cannot</b> be crunched together.
11. _____ Set Building Notation	K. The <u>graphical solution</u> that is interpreted as the only numerical values capable of solving either statement in an “or” compound inequality.
12. _____ Significance of shaded region for “and” statements	L. <u>Example</u> of absolute value inequality that will be written as a compound “or” statement and will have a traditional answer.
	M. Usually has a solution that graphs as dumb-bell, on occasion will answer as $\{ \}$ , statement that <b>can</b> be crunched together.
	N. <u>Example</u> of absolute value inequality that will have $\{ \}$ - “the empty set” as a solution