Name: _____ Period: _____ Date: _____

Solving Inequalities Test

Check whether the given number is a solution of the inequality.

1. $3x + 5x < 33 \qquad x = 4$

2. $9x \leq 7x - 1 \qquad x = 11$

Write and solve each inequality.

3. 12 is greater than or equal to 15 divided by x.

4. The sum of a number x and 13 is greater than or equal to 27.

5. Fifteen times a number is less than or equal to 27.

6. In a basketball game, team A and team B currently have a score of 60 and 70, respectively. If there are still 2 minutes remaining in the game, how much additional point should team A have to win the game?

Graph each inequality.

7. $x \leq 20$

8. $x \geq -3$ and $x \leq 1$

9. $x > 7$ or $x < 5$

Solve each inequality.

10. $-5 < 4 + x$

11. $3x < -3 + 2x$

12. $-\frac{y}{12} \leq -\frac{1}{4}$

13. $13 > -2a - 7$

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Solving Inequalities Test

14. $-3y - 7 > 5y - 4$

15. $\frac{6y + 9}{4} < 4y$

16. $|3x + 4| - 3 \geq 13$

Solve the equation.

17. $|3x - 7| - 5 = 27$

Solve each compound inequality. Then graph the solution set.

18. $3x + 1 \leq 25$ or $-3x \geq -12$

19. $|x + 11| \geq 21$

Write the solutions of each inequality in set-builder notation.

20. $-2(x - 5) + 1 < -24 + 5x$

21. Suppose $R = \{\ldots, -4, -2, 0, 2, 4, 6, \ldots\}$ is the universal set and $S = \{2, 4, 6, \ldots\}$. What is S'?

Write each set in roster form and in set-builder notation.

22. T is the set of natural numbers that are factors of 15.

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Solving Inequalities Test

For the graph, write an open sentence involving absolute value.

23.

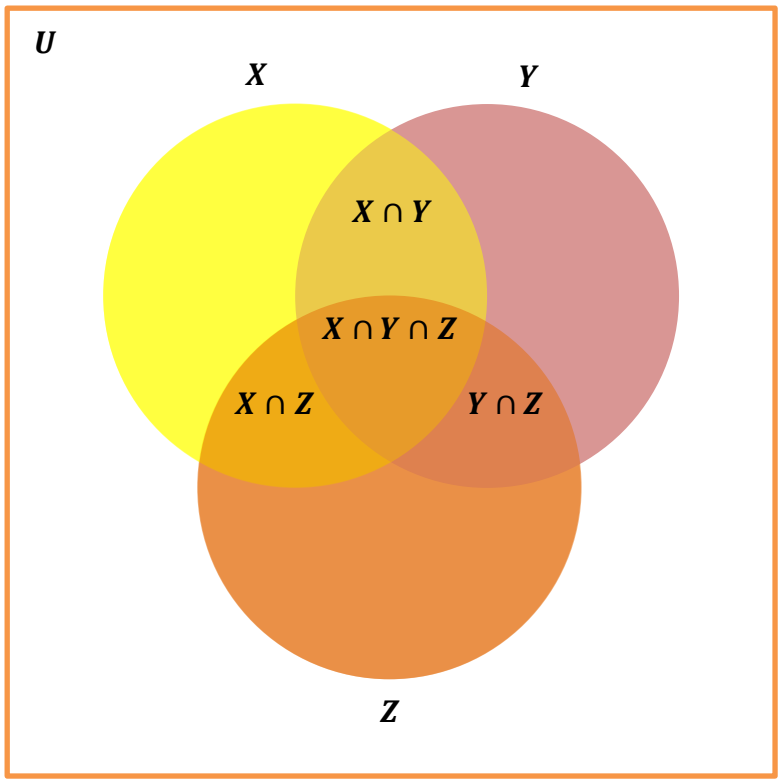
Midpoint: **Distance from midpoint:**

Solve the inequality. Write the solution as either the union or intersection of two sets.

24. $|1.5x - 4.5| < 15$

Draw a Venn diagram to represent the union and intersection of these sets.

25. Let $X = \{9, 10, 11, 12, 13\}$, $Y = \{11, 13, 15, 17\}$ and $Z = \{10, 12, 14, 16\}$. Find $X \cap Y$?



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