READY, SET, GO! **Name** **Period** **Date**

READY

Topic: Write an equation from a context. Interpret notation for inequalities.

Write an equation that describes the story. Then answer the question asked by the story.

1. Virginia's Painting Service charges $10 per job and $0.20 per square foot. If Virginia earned $50 for painting one job, how many square feet did she paint at the job?

2. Renting the ice-skating rink for a party costs $200 plus $4 per person. If the final charge for Dane's birthday party was $324, how many people attended his birthday party?

Indicate if the following statements are <u>true</u> or <u>false</u>. Explain your thinking.

3. The notation $12 < x$ means the same thing as $x < 12$. It works just like $12 = x \text{ and } x = 12$.

4. The inequality $-2(x + 10) \geq 75$ says the same thing as $-2x - 20 \geq 75$. I can multiply by -2 on the left side without reversing the inequality symbol.

5. When solving the inequality $10x + 22 < 2$, the second step should say $10x > -20$ because I added -22 to both sides and I got a negative number on the right.

6. When solving the inequality $-5x \geq 45$, the answer is $x \leq -9$ because I divided both sides of the inequality by a negative number.

7. The words that describe the inequality $x \geq 100$ are "*x is greater than or equal to 100.*"

SET

Topic: Solve inequalities. Verify that given numbers are elements of the solution set.

Solve for x. (Show your work.) Indicate if the given value of x is an element of the solution set.

8. $2x - 9 < 3$

Is this value part of the solution set? $x = 6$; *yes*? *no*?

9. $4x + 25 > 13$

Is this value part of the solution set? $x = -5$; *yes*? *no*?

10. $6x - 4 \leq -28$

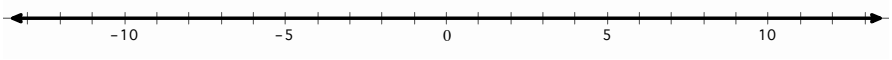
Is this value part of the solution set? $x = -10$; *yes*? *no*?

11. $3x - 5 \geq -5$

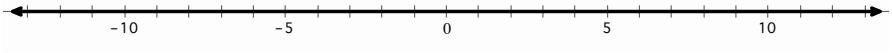
Is this value part of the solution set? $x = 1$; *yes*? *no*?

Solve each inequality and graph the solution on the number line.

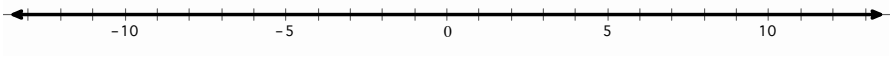
12. $x + 9 \leq 7$



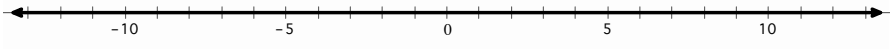
13. $-3x - 4 > 2$



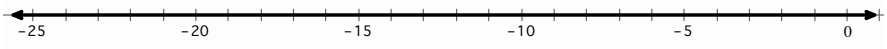
14. $3x < -6$



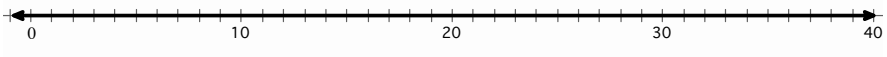
15. $\frac{x}{5} > -\frac{3}{10}$



16. $-10x > 150$



17. $\frac{x}{-7} \geq -5$



Solve each multi-step inequality.

18. $x - 5 > 2x + 3$

19. $\frac{3(x-4)}{12} \leq \frac{2x}{3}$

20. $2(x - 3) \leq 3x - 2$

GO

Topic: Use substitution to solve linear systems

Solve each system of equations by using substitution.

Example: $\begin{cases} y = 12 \\ 2x - y = 14 \end{cases}$

The first equation states that $y = 12$. That information can be used in the second equation to find the value of x by replacing y with 12. The second equation now says $\mathbf{2x} - (\mathbf{12}) = \mathbf{14}$. Solve this new equation by adding 12 to both sides and then dividing by 2. The result is x = 13.

21. $\begin{cases} y = 5 \\ -x + y = 1 \end{cases}$

22. $\begin{cases} x = 8 \\ 5x + 2y = 0 \end{cases}$

23. $\begin{cases} 2y = 10 \\ 4x - 2y = 50 \end{cases}$

24. $\begin{cases} 3x = 12 \\ 4x - y = 5 \end{cases}$

25. $\begin{cases} y = 2x - 5 \\ y = x + 8 \end{cases}$

26. $\begin{cases} 3x = 9 \\ 5x + y = -5 \end{cases}$