Sketch a graph for each inequality and then state 4 solutions.
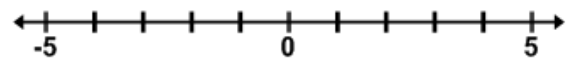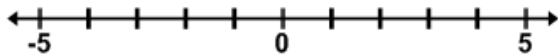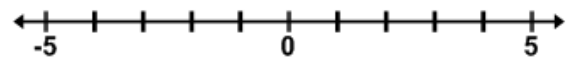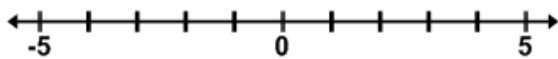
1. $x > 2$ 4 solutions:_____

2. $4 \leq m$ 4 solutions:_____

3. $r \leq -3$ 4 solutions:_____


4. $5 > b$ 4 solutions:_____

5. **Consider the statement "You need *at least* 4 pieces of paper for your math homework."**

- Can you have exactly 4 pieces of paper? Explain.

- Circle each number that makes the statement true.

  -3 -2 -1 0 1 2 3 4 5 6

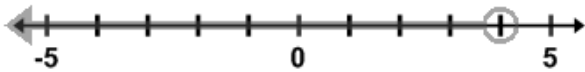- Write four other numbers that make the statement true.

6. **Consider the statement "After playing a video game for 20 minutes, you have *fewer than* 6 points."**

- Circle each number that makes the statement true.

  -2 -1 0 1 2 3 4 5 6 7

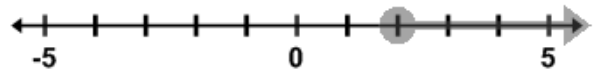- Make a graph to show all of the other numbers that will work.
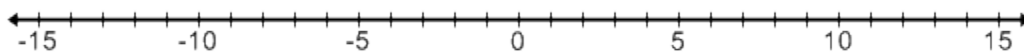
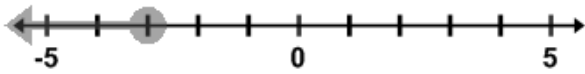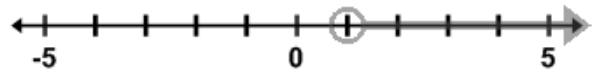**Given the graph, write the inequality.**

7. _____

8. _____

9. _____

10. _____

Is the given number a solution to the inequality? Show how you know.

11. $3x - 4 > 8$ $x = 4$ YES or NO

12. $\dfrac{2}{3}x + 5 > -2$ $x = -6$ YES or NO

13. $9 - x \leq 10$ $x = -1$ YES or NO

14. $-4 \leq \dfrac{x}{3} - 11$ $x = -15$ YES or NO

Solve and graph each inequality.

15. $d - 3 \geq -5$

16. $-4 > m - 5$

17. $\dfrac{1}{2} < \dfrac{n}{6}$

18. $m - 4 < 0$

19. $7 \geq y + 6$

20. $\dfrac{w}{-2} > 1$

21. $-6x > -18$

22. $3c < 12$

23. You get pulled over and a police officer tells you that the speed limit is 45 miles per hour. Write an inequality to represent the speed you are allowed to travel.

24. In order to pass a class you have to get more than a 95 on the final. Write an inequality to represent the score you need.

25. Betty is afraid of heights and will not go above the 20th floor of a tall building. Write an inequality to represent the floors Betty will go on.

Simplify.

26. $-3(4)+(-4)(-2)$

27. $5-2^3+4(3-2)$

28. $3^2+6(-3+1)$

29. $8+|5-10|$

30. $\dfrac{6(-6+9)}{36\div 6}$

31. $250\div 5(2)$