NAME

Module 5 Solving Linear Inequalities of One Variable
Lesson 1 Solving Linear Inequalities by Inspection

independent practice

Graph each inequality on a number line.

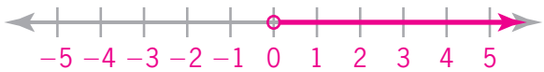
1. $M \geq -3$

2. $M \leq -3$

3. $x < 8$

4. $x > 8$

5. $T > 0$



6. $T \leq 0$

7. $-5 < r$

8. $r > -5$

9. $y \leq -4$

10. $-4 \geq y$

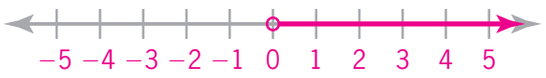
Solve the following inequalities by inspection. Then graph each solution on a number line.

11. $w + 5 \geq 8$ **$w \geq 3$**

12. $4 - d < 10$ **$d > -6$**

13. $P - 10 \leq -17$ **$P \leq -7$**

14. $K + 8 > 8$ **$K > 0$**



15. $7c \geq -35$ **$c \geq -5$**

16. $12A < 84$ **$A < 7$**

17. $\frac{x}{4} \leq 0$ **$x \leq 0$**

18. $\frac{N}{3} > 0$ **$N > 0$**

Determine if the given number is a solution to the inequality. Explain your answer.

19. $m = -8$ for $-\frac{40}{m} \leq 4$ **No, $5 \leq 4$ is false.**

20. $R = 4$ for $-\frac{R}{2} \geq -10$ **Yes, $-2 \geq -10$ is true.**

Journal

1. Explain why there may be more than one value, for a given inequality, which makes the statement true.
2. Describe how you would draw the solution to the inequality $x \geq 4$.
3. Describe how you would draw the solution to the inequality $x < -6$.
4. If you were comparing two objects, what words or phrases could you use to mean "greater than" or "less than"?
5. Explain how to solve inequalities by inspection.

DIGITAL

Cumulative Review

Identify all the sets of numbers to which each of the following belong.

1. -15 integers, rationals, reals
2. 7 whole numbers, natural numbers, integers, rationals, reals
3. $-2\frac{3}{5}$ rationals, reals
4. $\sqrt{17}$ irrationals, reals

If possible, give an example of a number that is: possible answers given

5. a whole number, but not a natural number.
   0
6. both a whole number and an irrational number.
   not possible
7. both a natural number and an integer.
   2
8. both an integer and a rational number.
   –14
9. both a natural number and a real number.
   5
10. both a natural number and an irrational number.
    not possible

Possible Journal Answers

1. When a situation could be "greater than" or "less than" instead of "equal to", there may be more than one answer that makes the statement true. For example, if $x > 3$ and $x = 5$, this makes a true statement, but any number greater than 5 will also make the statement true.
2. Use a closed circle (dot) to identify the number 4 on the number line. Then draw a line thicker than the number line to the right of the number 4 because the numbers that make the inequality true are greater than or equal to 4.
3. Use an open circle to identify the number –6 on the number line. Then draw a line thicker than the number line to the left of the number –6 because the numbers that make the inequality true are less than –6.
4. You could use "bigger than" or "smaller than."
5. Substitute numbers for the variable in the inequality and see if the statement is true. If the statement is true, then this number is in the solution set. If the statement is false, the substituted number is not part of the solution set.