Name_____ Date_____ Period_____

LESSON 8-5 · SESSION 2 · PRACTICE · FORM A

Testing Solutions to Inequalities

Learning target – I can test values against an inequality and graph the solution set. · 6.EE.B.8

REMEMBER

- To **test** a value, substitute it for the variable. A **true** statement means it is a solution.
- Test the **boundary**: true means a closed dot (≤, ≥); false means an open dot (<, >).
- **More than** means >. **Fewer than** and **below** mean <. **At most** means ≤.

WORKED EXAMPLE

Test 8, 9 and 10 in $x < 9$.

Step 1 8 < 9 is true, so 8 is a solution.

Step 2 9 < 9 is false, so use an open dot at 9.

Step 3 10 < 9 is false, so 10 is not a solution.

Answer **8 works; open dot at 9, arrow left**

WORDS **substitute** *(sustituir)* · **solution** *(solución)* · **true statement** *(enunciado verdadero)*

PRACTICE

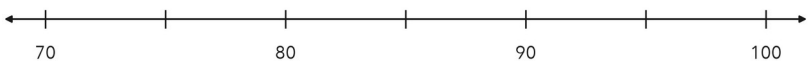
show your work · label units

1. Is the value a solution? Write **yes** or **no**.

a. $n \geq 14$; $n = 14$ ___ **b.** $n \geq 14$; $n = 13$ ___ **c.** $x < 9$; $x = 9$ ___

d. $p > 8$; $p = 3$ ___ **e.** $k \geq 7$; $k = 7$ ___ **f.** $w < 12$; $w = 9.5$ ___

2. **Go-Kart Track.** A go-kart track lets a driver race only when the driver weighs more than 80 pounds. Let w be the weight in pounds.



a. Write the inequality. _____

b. Substitute 95. Is it a solution? _____

c. Substitute 80. Is it a solution? _____

d. Graph the inequality.

3. **Ride Line.** A park closes a ride's line when more than 45 people are waiting. Write an inequality using n. Test 45 and 52.

Hint *Substitute each number. A true statement means a solution.*

Show your work.

Inequality_____

4. Lab Liquid. An experiment works only while a liquid stays below 25 °C. Write an inequality using c. Test 25 and 19.

Hint *"Below" leaves the boundary out.*

Show your work.

Inequality_____

5. Advanced Ramp. A skate park opens its advanced ramp only to riders older than 15. Write an inequality using a. Is 15 a solution?

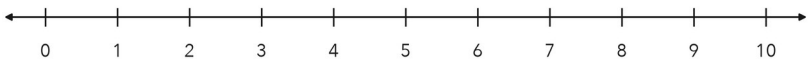
Hint *Is the boundary older than itself?*

Show your work.

Inequality_____

6. Test and Graph. For $x \leq 5$, test $x = 5$ and $x = 6$. Then graph the inequality.

Hint *The boundary test tells you the dot.*



Solutions_____

7. Wind Speed. A rocket club launches only when the wind speed is less than 12 miles per hour. Write an inequality using w. Test 12, 9 and 15.

Show your work.

Inequality_____

8. Baggage Rule. An airline allows a bag that weighs at most 50 pounds. Three bags weigh 50, 51 and 38 pounds.

a. Write the inequality, using w. _____

b. Which bags are allowed? _____

c. Describe the graph. What does the dot tell you about a 50-pound bag?

Show your work.

FIND THE ERROR

explain the mistake, then fix it

9. Ravi's Work. Ravi graphed $x > 26$ with a closed dot at 26. He told his group that 26 is one of the solutions. Explain his mistake and fix the graph.

_____

_____

_____

TEST PRACTICE

choose the best answer

10. Which value is a solution of $p > 8$?

A 3 **B** 8 **C** 7.9 **D** 8.5

11. Testing the boundary value tells you —

A the arrow direction

B whether the dot is open or closed

C which letter to use

D the units

SELF-CHECK CODE *find your answer · copy its letter into that problem's box · spell a math word*

$w \leq 50$ **S**	$a > 15$ **U**	$w < 12$ **E**	$w > 80$ **V**	$c \leq 25$ **Z**	$a \geq 15$ **J**	$c < 25$ **L**	$n > 45$ **A**	$w \geq 80$ **Q**	$w < 50$ **X**

#2a	#3	#4	#5	#7	#8a

CHECK YOURSELF	☐ I can do this on my own	☐ I need a little help	☐ I have a question about #___