Name_____ Date_____ Period_____

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

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

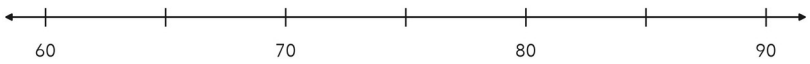
show your work · label units

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

a. $n \geq 15$; $n = 18$ ___ **b.** $y < 4$; $y = 4$ ___ **c.** $t > 9$; $t = 9.5$ ___

d. $k \leq -1$; $k = 0$ ___ **e.** $m \geq 6$; $m = 6$ ___ **f.** $x > 2$; $x = -3$ ___

2. **Zip Line.** A zip line lets a rider go only when the rider weighs more than 70 pounds. Let w be the weight in pounds.



a. Write the inequality. _____

b. Substitute 85. Is it a solution? _____

c. Substitute 70. Is it a solution? _____

d. Graph the inequality.

3. **Snack Bar.** A snack bar opens a second window when more than 30 people are waiting. Write an inequality using n. Test 30 and 41.

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

Show your work.

Inequality_____

4. Fish Tank. Fish stay healthy only while the water stays below 28 °C. Write an inequality using c. Test 28 and 24.

Hint *"Below" leaves the boundary out.*

Show your work.

Inequality_____

5. Teen Center. A teen center is open to people older than 12. Write an inequality using a. Is 12 a solution?

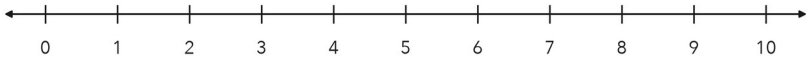
Hint *Is the boundary older than itself?*

Show your work.

Inequality_____

6. Test and Graph. For $x \geq 4$, test $x = 4$ and $x = 3$. Then graph the inequality.

Hint *The boundary test tells you the dot.*



Solutions_____

7. Drone Range. A drone keeps its signal while it is less than 400 meters from the pilot. Write an inequality using d. Test 400, 350 and 410.

Show your work.

Inequality_____

8. Backpack Rule. A hiking club allows a backpack that weighs at most 30 pounds. Three packs weigh 30, 32 and 24 pounds.

a. Write the inequality, using w. _____

b. Which packs are allowed? _____

c. Describe the graph. What does the dot tell you about a 30-pound pack?

Show your work.

FIND THE ERROR

explain the mistake, then fix it

9. Kiara's Work. Kiara graphed $y < 15$ with a closed dot at 15. She told her group that 15 is one of the solutions. Explain her mistake and fix the graph.

_____

_____

_____

TEST PRACTICE

choose the best answer

10. Which value is a solution of $k \geq 7$?

A 6 **B** 6.9 **C** 7 **D** −7

11. To decide whether to use an open or a closed dot, test –

A the boundary value

B a value far from the boundary

C zero

D a negative value

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

n > 30 H	d ≤ 400 X	w ≤ 30 S	w ≥ 70 Q	a > 12 C	a ≥ 12 J	c < 28 E	w > 70 C	c ≤ 28 Z	d < 400 K

#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 #___