Name_____ Date_____ Period_____

LESSON 8-5 · SESSION 1 · PRACTICE · FORM B

Graphing Inequalities

Learning target – I can graph an inequality on a number line using an open or a closed dot. · 6.EE.B.8

REMEMBER

- An **open dot** means the boundary is NOT a solution (< or >). A **closed dot** means it is (≤ or ≥).
- Point the arrow toward the numbers that work: > and ≥ point **right**; < and ≤ point **left**.
- **At least** means ≥. **At most** means ≤. **Under** means <.

WORKED EXAMPLE

Graph $x < 6$ on a number line.

Step 1 The boundary number is 6.

Step 2 < does not include 6, so draw an open dot at 6.

Step 3 Less than 6 means the arrow points left. Test: $5 < 6$ is true.

Answer **open dot at 6, arrow pointing left**

WORDS **boundary point** *(punto límite)* · **closed circle** *(círculo cerrado)* · **open circle** *(círculo abierto)*

PRACTICE

show your work · label units

1. Describe each graph: open or closed dot, and the arrow direction.

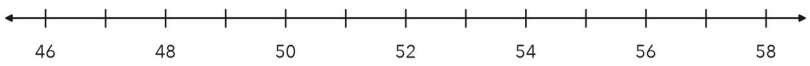
a. $k \leq -4$ _____

b. $n > 10$ _____

c. $p < -2$ _____

d. $x \geq 1$ _____

2. **Roller Coaster.** A roller coaster lets a rider on only when the rider is at least 52 inches tall. Let h be the height in inches.



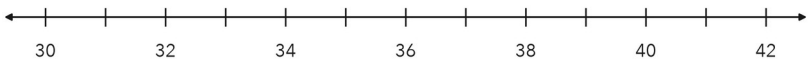
a. Write the inequality. _____

b. Graph it on the number line.

c. Name one value that works and one that does not. _____

3. **Bike Rack.** A bike rack outside the gym holds at most 36 bikes. Write an inequality using b. Then graph it.

Hint *"At most" means the boundary is allowed, so fill the dot.*



Inequality_____

4. Pool Closed. A pool closes when the air temperature drops to 65 degrees or lower. Write an inequality using t and describe its graph.

Hint *"Or lower" means 65 itself counts.*

Show your work.

Inequality_____

5. Lap Lane. Swimmers must be at least 12 years old to use the lap lane. Write an inequality using a and describe its graph.

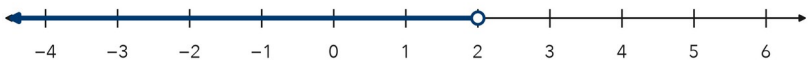
Hint *"At least" means age 12 is allowed.*

Show your work.

Inequality_____

6. Read a Graph. Use the graph below.

Hint *An open dot leaves the boundary out; a closed dot keeps it.*



a. Write the inequality, using x. _____

b. Is 2 a solution? Explain. _____

7. Canned Food Drive. A homeroom wins a breakfast when it collects at least 180 cans. Let c be the number of cans.

Hint *Any total of 180 or more wins the breakfast.*

a. Write the inequality. _____

b. Name two totals under your arrow. _____

8. Two Signs. A ride sign says riders must be at least 48 inches tall. A bridge sign says trucks must weigh under 10 tons.

a. Write an inequality for the first sign, using h. _____

b. Write an inequality for the second sign, using w. _____

c. Explain why one graph uses a closed dot and the other an open dot.

Show your work.

FIND THE ERROR

explain the mistake, then fix it

9. Omar's Work. Omar graphed $x \leq 7$. He drew a closed dot at 7 and then drew his arrow pointing to the right. Explain his mistake and describe the correct graph.

TEST PRACTICE

choose the best answer

10. The graph of $x < 8$ has –

A a closed dot at 8, arrow left

B an open dot at 8, arrow right

C an open dot at 8, arrow left

D a closed dot at 8, arrow right

11. A closed dot at the boundary means the boundary value is –

A a solution **B** not a solution **C** negative **D** zero

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

$x < 2$ **C**	$c \geq 180$ **L**	$b \geq 36$ **Z**	$h \geq 52$ **C**	$h > 52$ **Q**	$w < 10$ **E**	$w \leq 10$ **J**	$b \leq 36$ **I**	$x \leq 2$ **X**	$t \leq 65$ **R**

#2a	#3	#4	#6a	#7	#8b

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