LESSON MAKER PRO

Boundary Rules

Write inequalities from limits and number lines.

GRADE 6 · 6.PFA.4.b

6.PFA.4.b "Write a linear inequality in one variable to represent a given constraint or condition in context or given a graph on a number line."

NAME _____ DATE _____

READ THE BOUNDARY

An inequality shows which values are allowed. A boundary that is included uses ≤ or ≥, while a boundary that is not included uses < or >. Values to the right are greater, and values to the left are less.

WORKED EXAMPLE

The number line marks the first allowed value. The marked value is included, and allowed values go to the right. Write an inequality.



1. The boundary value is 8.
2. The boundary is included, so use ≥.
3. Values go right, so they are greater than 8.

Answer: x ≥ 8

PRACTICE 4 problems

1 Write an inequality: x is less than -2.

ANSWER _____

2 Write an inequality: x is at least 14.

ANSWER _____

3 Write an inequality: x is no more than 3.

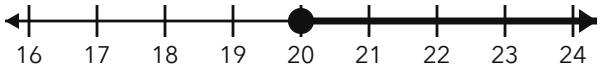
ANSWER _____

4 Write an inequality: x is greater than 9.

ANSWER _____

APPLY IT Show your work

1 A game needs enough free storage to install. The number line marks 20 GB. The marked value and amounts to its right work. Let x be free storage in GB. Write an inequality.



ANSWER _____

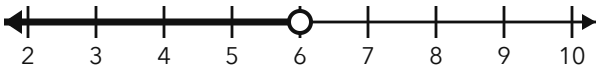
2 An avatar in an online game costs 25 points. Let x be the number of points Jordan has. Jordan must have enough points to buy it. Write an inequality.

WORK SPACE

ANSWER _____

CHALLENGE One step up

The number line marks a cutoff. Values to the left are allowed, but the marked value is not allowed. Write an inequality and explain how you chose the sign.



WORK SPACE AND ANSWER

ANSWER KEY

Boundary Rules

GRADE 6 · 6.PFA.4.b

PART 1 · PRACTICE

#	PROBLEM	ANSWER
1	Write an inequality: x is less than -2.	**x < -2**
2	Write an inequality: x is at least 14.	**x ≥ 14**
3	Write an inequality: x is no more than 3.	**x ≤ 3**
4	Write an inequality: x is greater than 9.	**x > 9**

PART 2 · APPLY IT

1. **x ≥ 20** The game needs 20 GB or more. The marked value is included and usable values are to the right.
2. **x ≥ 25** Jordan needs 25 points or more to make the purchase.

CHALLENGE

x < 6. Left means less than 6, and the cutoff is not included, so the sign is <.

Accept equivalent forms with the variable on either side, such as 20 ≤ x. For the challenge, accept any accurate explanation that connects left with less than and exclusion with a strict inequality.