ALBERT

Name _____ Date _____

Inequalities Worksheet

Grade 6 · Common Core 6.EE.B.8

> Write an inequality of the form x > c or x < c to represent a constraint or condition in a real-world or mathematical problem. Recognize that inequalities of the form x > c or x < c have infinitely many solutions; represent solutions of such inequalities on number line diagrams.

Practice

Builds the skill step by step.

1. Write an inequality for "x is greater than 5."

2. Write an inequality for "y is less than 12."

3. Which inequality means "a number n is at most 20"?

   A. $n \geq 20$

   B. $n < 20$

   C. $n \leq 20$

   D. $n > 20$

4. Write an inequality for "you must be at least 48 inches tall to ride." Use h for height.

5. Which number is a solution of $x > 7$?

   A. 7

   B. 7.5

   C. 6

   D. 0

6. Name three solutions of $m < 3$.

7. On a number line, the graph of $x > 4$ has an open circle at 4 and an arrow pointing which way?

   A. Left

   B. Right

   C. Both ways

   D. No arrow

8. Write an inequality for "the temperature t is below 0 degrees."

9. Is 10 a solution of $k \leq 10$? Answer yes or no.

10. How many solutions does $x < 5$ have?

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On Level

Grade-level practice.

1. A bus holds no more than 40 students. Write an inequality for the number of students s on the bus.

2. The graph of an inequality has a closed circle at -2 and an arrow pointing left. Which inequality is it?

   A. $x \leq -2$

   B. $x < -2$

   C. $x \geq -2$

   D. $x > -2$

3. Describe the graph of $y \geq 1.5$ on a number line.

4. A movie is rated for viewers older than 12. Write an inequality for an allowed age a.

5. Which value is NOT a solution of $n \geq -3$?

   A. -4

   B. -3

   C. 0

   D. 2.5

6. A phone needs more than 20% battery to start an update. Write an inequality for the battery level b.

7. Write an inequality shown by an open circle at 6 and an arrow pointing left.

8. Kim can spend at most $25 on supplies. Write an inequality for the amount she spends, c.

9. Which situation matches $x \geq 16$?

   A. A driver must be younger than 16.

   B. A driver must be exactly 16.

   C. A driver must be older than 16.

   D. A driver must be at least 16 years old.

10. Name the least whole number that is a solution of $x > 9$.

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Challenge

Multi-step and word problems that stretch it.

1. A box can hold less than 15 pounds. It already holds 6 pounds. Write an inequality for the weight w that can still be added, and give the greatest whole number of pounds.

2. Explain why $x > 3$ and $3 < x$ describe the same numbers.

3. A ride requires height h with $h \geq 52$ inches. Lucy is 4 feet 3 inches tall. Can she ride?

   A. Yes, she is 53 inches.

   B. No, she is 51 inches, which is less than 52.

   C. Yes, 4 feet 3 inches is 52 inches.

   D. No, she is 43 inches.

4. Write an inequality for "a number decreased by 4 is greater than 10," then give the smallest whole-number solution.

5. The low temperature tonight will be at least $-8°F$. Write an inequality for the temperature t and name two possible temperatures.

6. Tom says $x < 5$ has only five solutions: 0, 1, 2, 3 and 4. What mistake did he make?

7. Which inequality has the same solutions as "x is not more than 7"?

   A. $x \leq 7$

   B. $x < 7$

   C. $x \geq 7$

   D. $x > 7$

8. A school needs at least 120 students to sign up for a trip. 87 have signed up. Write an inequality for how many more students s must sign up.

9. Write an inequality whose graph is a closed circle at $\frac{3}{4}$ and an arrow pointing right.

10. An elevator holds at most 2,000 pounds. Each crate weighs 150 pounds. Write an inequality for the number of crates c and find the greatest number that can ride.