LESSON MAKER PRO

Inequality Value Check

Test numbers to find values that make inequalities true.

GRADE 6 · 6.PFA.4.e

6.PFA.4.e "Identify a numerical value(s) that is part of the solution set of a given inequality in one variable."

NAME _____ DATE _____

CHECK BY SUBSTITUTING

A number is in an inequality's solution set when replacing x with that number makes a true comparison. Substitute each possible value for x, simplify, and check whether the inequality is true.

WORKED EXAMPLE

Is x = 11 part of the solution set of x - 8 ≤ 15?

1. Substitute 11 for x: 11 - 8 ≤ 15.
2. Simplify the left side: 3 ≤ 15.
3. The comparison is true, so 11 is a solution.

Answer: Yes, x = 11 is part of the solution set.

PRACTICE 6 problems

1 Which listed values are part of the solution set of x + 4 < 13? Choose from 5, 6, and 9.

ANSWER _____

2 Which listed values are part of the solution set of 2x ≥ 14? Choose from 5, 7, and 9.

ANSWER _____

3 Which listed value is part of the solution set of x / 5 > 2? Choose from 9, 10, and 12.

ANSWER _____

4 Which listed value is part of the solution set of x - 14 ≤ 2? Choose from 16, 17, and 19.

ANSWER _____

5 Which listed value is part of the solution set of 24 - x < 4? Choose from 19, 20, and 22.

ANSWER _____

6 Which listed value is part of the solution set of 2x + 1 > 17? Choose from 6, 7, and 9.

ANSWER _____

APPLY IT Show your work

1 A game costs 6 tokens. Jalen has 31 tokens and wants more than 18 tokens left after playing. If x is a positive whole number of games, what values can x have?

WORK SPACE

ANSWER _____

2 Rina has $28. Each snack costs $7, and she needs at least $9 left for a movie ticket. If x is the number of snacks she buys and x is a whole number including 0, what values can x have?

WORK SPACE

ANSWER _____

CHALLENGE One step up

Without solving the inequality fully, decide whether x = 18 is part of the solution set of $4x - 9 \geq 63$. Explain by substituting 18 for x.

WORK SPACE AND ANSWER

ANSWER KEY

Inequality Value Check

GRADE 6 · 6.PFA.4.e

PART 1 · PRACTICE

#	PROBLEM	ANSWER
1	Which listed values are part of the solution set of x + 4 < 13? Choose from 5, 6, and 9.	**5 and 6**
2	Which listed values are part of the solution set of 2x ≥ 14? Choose from 5, 7, and 9.	**7 and 9**
3	Which listed value is part of the solution set of x / 5 > 2? Choose from 9, 10, and 12.	**12**
4	Which listed value is part of the solution set of x - 14 ≤ 2? Choose from 16, 17, and 19.	**16**
5	Which listed value is part of the solution set of 24 - x < 4? Choose from 19, 20, and 22.	**22**
6	Which listed value is part of the solution set of 2x + 1 > 17? Choose from 6, 7, and 9.	**9**

PART 2 · APPLY IT

1. **x = 1 or x = 2** Write 31 - 6x > 18. Test positive whole-number values, and only 1 and 2 leave more than 18 tokens.
2. **x = 0, 1, or 2** Write 28 - 7x ≥ 9. The whole-number values 0, 1, and 2 make the inequality true.

CHALLENGE

Yes. 4(18) - 9 = 63, and 63 ≥ 63 is true, so x = 18 is part of the solution set.

Accept values listed in any order. For the challenge, accept any explanation that correctly substitutes 18 and shows that the comparison is true.