LESSON MAKER PRO

Substitute and Decide

Test equations and inequalities using a given value of x.

GRADE 6 · 6.PAR.7.1

6.PAR.7.1 "Solve one-step equations and inequalities involving variables when values for the variables are given. Determine whether an equation and inequality involving a variable is true or false for a given value of the variable."

NAME _____ DATE _____

THE BIG IDEA

Replace x with the value you are given. Then calculate each side and decide whether the equation or inequality is true or false.

WORKED EXAMPLE

Is x / 3 = 4 true or false when x = 12?

1. Replace x with 12: 12 / 3 = 4
2. Divide: 4 = 4
3. Both sides are equal.

Answer: True

PRACTICE 6 problems

1 Is 5x = 35 true or false when x = 7?

ANSWER _____

2 Is x + 9 < 15 true or false when x = 4?

ANSWER _____

3 Is x - 6 = 11 true or false when x = 17?

ANSWER _____

4 Is 2x >= 18 true or false when x = 8?

ANSWER _____

5 Is x / 8 > 3 true or false when x = 32?

ANSWER _____

6 Is 9 + x = 20 true or false when x = 11?

ANSWER _____

APPLY IT Show your work

1 In a video game, Jalen earns x coins for each completed level. He completes 4 levels, and x = 6. Is the statement 4x = 24 true or false? Show your calculation.

WORK SPACE

ANSWER _____

2 A streaming club allows members to borrow fewer than 9 movies at one time. Priya has x movies checked out, and x = 10. Is the inequality x < 9 true or false? Show your calculation.

WORK SPACE

ANSWER _____

CHALLENGE One step up

A club has the rule x + 7 <= 19. Which value makes the rule true, x = 10 or x = 14? Explain by testing both values.

WORK SPACE AND ANSWER

ANSWER KEY

Substitute and Decide

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PART 1 · PRACTICE

#	PROBLEM	ANSWER
1	Is 5x = 35 true or false when x = 7?	**True**
2	Is x + 9 < 15 true or false when x = 4?	**True**
3	Is x - 6 = 11 true or false when x = 17?	**True**
4	Is 2x >= 18 true or false when x = 8?	**False**
5	Is x / 8 > 3 true or false when x = 32?	**True**
6	Is 9 + x = 20 true or false when x = 11?	**True**

PART 2 · APPLY IT

1. **True** Substitute 6 for x. Since 4 × 6 = 24, the equation is true.
2. **False** Substitute 10 for x. Since 10 is not less than 9, the inequality is false.

CHALLENGE

x = 10. For x = 10, 10 + 7 = 17 and 17 <= 19 is true. For x = 14, 14 + 7 = 21 and 21 <= 19 is false.

Accept true or false written as words, T or F, if the meaning is clear. For the challenge, accept any explanation that correctly tests both values and identifies x = 10.