

Truth Test Math

Substitute, calculate, and decide.

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 _____

CHECK THE STATEMENT

To check a statement, replace x with the given value. Then calculate and compare the two sides, or decide whether the inequality sign is correct.

WORKED EXAMPLE

Is $x - 14 < 9$ true or false when $x = 20$?

1. Replace x with 20: $20 - 14 < 9$
2. Subtract: $6 < 9$
3. Since 6 is less than 9, the inequality is true.

Answer: True

PRACTICE 6 problems

1 Is $x + 8 = 21$ true or false when $x = 13$?

ANSWER _____

2 Is $x - 6 = 11$ true or false when $x = 18$?

ANSWER _____

3 Is $4x = 28$ true or false when $x = 7$?

ANSWER _____

4 Is $x / 5 > 3$ true or false when $x = 17$?

ANSWER _____

5 Is $x + 12 \leq 30$ true or false when $x = 19$?

ANSWER _____

6 Is $3x < 25$ true or false when $x = 8$?

ANSWER _____

APPLY IT Show your work

- 1** A streaming music contest gives 7 points for each playlist you make. Jordan made x playlists, where $x = 6$. The contest says Jordan earned at least 40 points. Is $7x \geq 40$ true or false?

WORK SPACE

ANSWER _____

- 2** A robotics club has x batteries and needs exactly 32 batteries for practice. When $x = 29$, five new batteries arrive. Is $x + 5 = 32$ true or false?

WORK SPACE

ANSWER _____

CHALLENGE One step up

CHALLENGE

When $x = 24$, decide whether both statements are true: $x \div 6 = 4$ and $x - 7 > 16$. Explain your reasoning.

PART 1 • PRACTICE

#	PROBLEM	ANSWER
1	Is $x + 8 = 21$ true or false when $x = 13$?	True
2	Is $x - 6 = 11$ true or false when $x = 18$?	False
3	Is $4x = 28$ true or false when $x = 7$?	True
4	Is $x / 5 > 3$ true or false when $x = 17$?	True
5	Is $x + 12 \leq 30$ true or false when $x = 19$?	False
6	Is $3x < 25$ true or false when $x = 8$?	True

PART 2 • APPLY IT

1. **True** Substitute 6 for x . Since $7 \times 6 = 42$ and $42 \geq 40$, the statement is true.
2. **False** Substitute 29 for x . Since $29 + 5 = 34$, and 34 does not equal 32, the statement is false.

CHALLENGE

Both statements are true. Substituting 24 gives $24 / 6 = 4$ and $24 - 7 = 17$, and $17 > 16$.

Accept True or False, or Yes or No if the response clearly matches the statement's truth value. For the challenge, accept equivalent calculations showing that both statements are true.