LESSON MAKER PRO

True or False?

Use values and graphs to test math statements.

GRADE 6 · 6.A.1.3

6.A.1.3 "Use and evaluate variables in expressions, equations, and inequalities that arise from various contexts, including determining when or if, for a given value of the variable, an equation or inequality involving a variable is true or false."

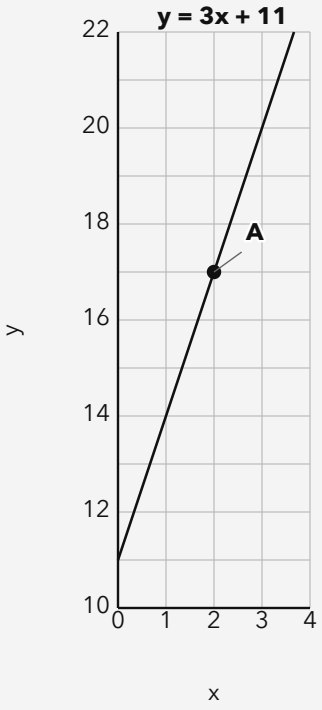
NAME _____ DATE _____

TEST A STATEMENT

A variable stands for a number that can change. Replace x with the given value, calculate, and compare the two sides to decide if a statement is true or false. On a graph, a point's horizontal position gives x.

WORKED EXAMPLE

Use point A on the graph. Is 3x + 11 = 17 true when x has the value shown at A?



1. Read the x-value at A: x = 2.
2. Substitute: 3(2) + 11 = 17.
3. Both sides equal 17.

Answer: True

PRACTICE 6 problems

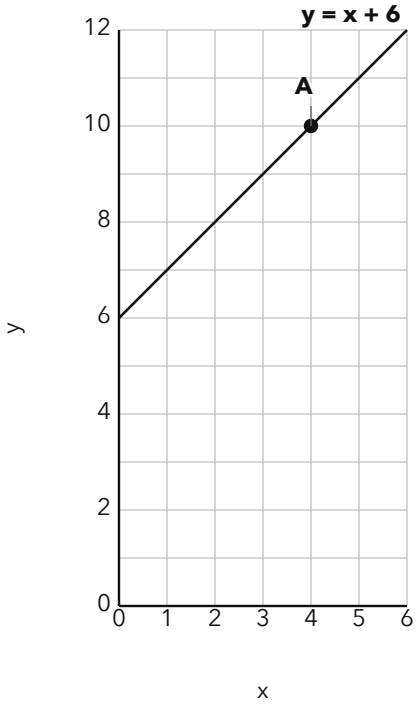
1 Evaluate 5x - 4 when x = 6.

ANSWER _____

2 Is 6x + 1 = 26 true or false when x = 4?

ANSWER _____

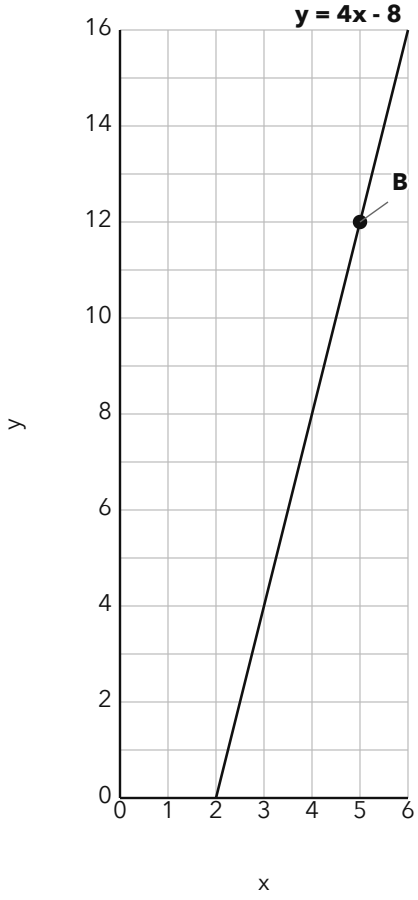
3 Use point A on the graph. Is the value of the graphed rule greater than 9 at A? Write the value and your decision.



ANSWER _____

_____

4 Use point B on the graph. Is the value of the graphed rule greater than 12 at B? Write the value and your decision.



ANSWER _____

_____

5 Is 2x + 7 < 24 true or false when x = 9?

ANSWER _____

6 Is 7x - 6 = 50 true or false when x = 8?

ANSWER _____

APPLY IT Show your work

1 In a game, you start with 6 points and earn 4 points for each level you finish. Let x be the number of levels. If you finish 5 levels, is 4x + 6 >= 28 true or false?

WORK SPACE

ANSWER _____

2 At a school fair, each activity costs $8, and the entry fee is $5. Let x be the number of activities. If you choose 4 activities, is 8x + 5 <= 37 true or false?

WORK SPACE

ANSWER _____

CHALLENGE One step up

Which whole-number value from 4 through 9 makes both 5x + 6 > 36 and 2x + 9 < 25 true? Show how you know.

WORK SPACE AND ANSWER

ANSWER KEY

True or False?

GRADE 6 · 6.A.1.3

PART 1 · PRACTICE

#	PROBLEM	ANSWER
1	Evaluate 5x - 4 when x = 6.	**26**
2	Is 6x + 1 = 26 true or false when x = 4?	**False**
3	Use point A on the graph. Is the value of the graphed rule greater than 9 at A? Write the value and your decision.	**10; true**
4	Use point B on the graph. Is the value of the graphed rule greater than 12 at B? Write the value and your decision.	**12; false**
5	Is 2x + 7 < 24 true or false when x = 9?	**False**
6	Is 7x - 6 = 50 true or false when x = 8?	**True**

PART 2 · APPLY IT

1. **False** Substitute x = 5. Since 4(5) + 6 = 26 and 26 is less than 28, the inequality is false.
2. **True** Substitute x = 4. Since 8(4) + 5 = 37 and 37 <= 37, the inequality is true.

CHALLENGE

x = 7. The first inequality needs x > 6, and the second needs x < 8. The only whole number between 6 and 8 is 7; checking gives 41 > 36 and 23 < 25.

For graph items, accept the correct value and true-or-false decision in either order. In the challenge, accept substitution checks for every whole number from 4 through 9 instead of the interval reasoning.