LESSON MAKER PRO

Solution Spot Check

Test numbers in linear inequalities.

GRADE 6 · 6.PFA.4.d

6.PFA.4.d "Use substitution or a number line graph to justify whether a given number in a specified set makes a linear inequality in one variable true."

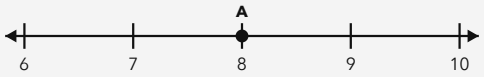
NAME _____ DATE _____

TEST BY SUBSTITUTION

Replace x with each number in the given set. Simplify both sides, then decide whether the inequality is true or false.

WORKED EXAMPLE

Point A is shown on the number line. Does A make 7x - 6 > 45 true?



1. Point A is 8.
2. Substitute: 7(8) - 6 > 45.
3. Simplify: 50 > 45.
4. The inequality is true.

Answer: Yes, A makes the inequality true.

PRACTICE 4 problems

1 Does x = -2 make 3x + 4 < 0 true? Show substitution.

ANSWER _____

2 Which values in {11, 13, 15} make 2x >= 26 true?

ANSWER _____

3 Does x = 12 make 5x - 1 <= 59 true? Show substitution.

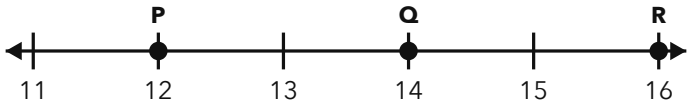
ANSWER _____

4 Which values in {-4, -1, 2} make x + 3 > 0 true?

ANSWER _____

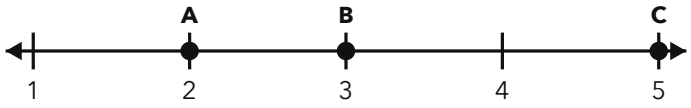
APPLY IT Show your work

1 An arcade bonus unlocks when 3x - 2 >= 34, where x is the number of rounds played. The marked points show possible round counts. Which points unlock the bonus?



ANSWER _____

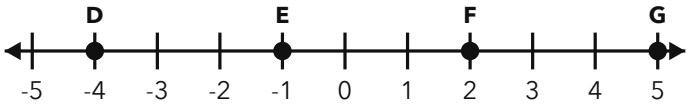
2 An art club earns $5 profit per sticker but pays an $11 booth fee. It wants at least $4 profit, so 5x - 11 >= 4. Which marked sales counts work?



ANSWER _____

CHALLENGE One step up

The marked points are a set of possible values of x. Which points make 3(x + 1) < 12 true? Explain with substitutions.



WORK SPACE AND ANSWER

ANSWER KEY

Solution Spot Check

GRADE 6 · 6.PFA.4.d

PART 1 · PRACTICE

#	PROBLEM	ANSWER
1	Does x = -2 make 3x + 4 < 0 true? Show substitution.	**Yes; 3(-2) + 4 = -2, and -2 < 0.**
2	Which values in {11, 13, 15} make 2x >= 26 true?	**13 and 15**
3	Does x = 12 make 5x - 1 <= 59 true? Show substitution.	**Yes; 5(12) - 1 = 59, and 59 <= 59.**
4	Which values in {-4, -1, 2} make x + 3 > 0 true?	**-1 and 2**

PART 2 · APPLY IT

1. **P, Q, and R** Substitute 12, 14, and 16. Each value makes 3x - 2 at least 34.
2. **B and C** For 2 stickers, 5(2) - 11 = -1, so it does not work. For 3 and 5 stickers, the profits are 4 and 14, so both work.

CHALLENGE

D, E, and F. The left side is -9, 0, and 9 for those points, and each is less than 12. For G, the left side is 18, which is not less than 12.

Accept correct substitutions and equivalent true or false statements. For number-line items, accept point labels, values, or both when they identify the correct choices.