LESSON MAKER PRO

Inequality Story Lab

Turn inequality symbols into real-world stories.

GRADE 8 · 8.PFA.5.d

8.PFA.5.d "Create a verbal situation in context given a multistep linear inequality in one variable."

NAME _____ DATE _____

BUILD THE STORY

Read the inequality from the inside out and turn each operation into an action in a story. Define x with units, make the inequality sign match words such as at least or fewer than, and include every number and operation. Your situation should explain what the expression measures and what it is compared with.

WORKED EXAMPLE

Create a situation for $11(x + 13) - 12 <= 47$.

1. Let x be the number of cans one team member collects.
2. Use x + 13 for each member's cans after an extra donation.
3. Multiply by 11 members, subtract 12 damaged cans, and make the result no more than 47.

Answer: Sample situation: Eleven team members each collect x cans and receive 13 extra donated cans. After 12 damaged cans are removed, the team has no more than 47 usable cans.

PRACTICE 6 problems

1 Part 1, Practice. Create a situation for 2x + 7 > 19. Define x.

ANSWER _____

2 Create a situation for 5x - 8 <= 27. Define x.

ANSWER _____

3 Create a situation for (x - 6)/2 >= 9. Define x.

ANSWER _____

4 Create a situation for 4(x + 2) < 32. Define x.

ANSWER _____

5 Create a situation for 18 - 3x >= 0. Define x.

ANSWER _____

6 Create a situation for 7 + x/5 <= 10. Define x.

ANSWER _____

APPLY IT Show your work

1 Part 2, Apply. An esports team is planning a points challenge. Given 2(x + 9) - 14 <= 40, create a situation about the challenge. Define x.

WORK SPACE

ANSWER _____

2 Given 6x + 15 > 51, create a situation about buying concert merchandise. Define x.

WORK SPACE

ANSWER _____

CHALLENGE One step up

CHALLENGE

Part 3, Challenge. Create a situation for 8(x - 10) + 17 >= 2x + 29. Define x and explain what each side of the inequality represents.

_____

_____

ANSWER KEY

Inequality Story Lab

GRADE 8 · 8.PFA.5.d

PART 1 · PRACTICE

#	PROBLEM	ANSWER
1	Part 1, Practice. Create a situation for 2x + 7 > 19. Define x.	**Sample situation: A student earns x points for each of 2 completed quests and receives 7 bonus points. The student wants a total score greater than 19 points.**
2	Create a situation for 5x - 8 <= 27. Define x.	**Sample situation: A club sells x snack bags for $5 each and pays an $8 event fee. The club's profit is no more than $27.**
3	Create a situation for (x - 6)/2 >= 9. Define x.	**Sample situation: A student has x dollars, spends $6, and splits the remaining money equally with a friend. Each person gets at least $9.**
4	Create a situation for 4(x + 2) < 32. Define x.	**Sample situation: A collector puts x + 2 cards into each of 4 packs. The total number of cards is fewer than 32.**
5	Create a situation for 18 - 3x >= 0. Define x.	**Sample situation: A phone battery starts at 18 percent and loses 3 percent each hour for x hours. The remaining battery charge is at least 0 percent.**
6	Create a situation for 7 + x/5 <= 10. Define x.	**Sample situation: A museum visit costs $7 plus $1 for every 5 minutes of audio-guide rental. A student spends no more than $10, where x is the number of rental minutes.**

PART 2 · APPLY IT

1. **Sample situation: In 2 matches, a player earns x points and gets 9 bonus points in each match. After a 14-point penalty, the player's total score is no more than 40 points.** Accept a context with 2 groups of x + 9, a subtraction of 14, and a total of at most 40. The student should define x as a quantity with units.
2. **Sample situation: At a concert, a student buys x glow sticks for $6 each and a $15 T-shirt. The total cost is more than $51.** Accept a context with x items costing $6 each, an additional cost of $15, and a total greater than $51. The student should define x as the number of items.

CHALLENGE

Sample situation: At a gaming event, Team A earns x - 10 points in each of 8 matches and receives 17 bonus points. Team A's score is at least Team B's score, which is 2x + 29 points. The left side represents Team A's total score, and the right side represents Team B's total score.

Accept any coherent context that preserves every operation, number, and inequality relationship. Equivalent wording for inequality signs is acceptable, such as at least for >= and no more than for <=.