LESSON MAKER PRO

Solve the Mystery

Write and solve one-step equations and inequalities.

GRADE 6 · 6.PAR.7.2

6.PAR.7.2 "Write one-step equations and inequalities to represent and solve problems; explain that a variable can represent an unknown number or any number in a specified set."

NAME _____ DATE _____

USE X TO REPRESENT NUMBERS

Use x for an unknown number or for numbers that fit a situation. Write an equation when two amounts are equal. Write an inequality when one amount can be greater than, less than, at least, or at most another amount.

WORKED EXAMPLE

Solve: x - 9 = 15

1. Add 9 to both sides.
2. x - 9 + 9 = 15 + 9
3. x = 24

Answer: x = 24

PRACTICE 6 problems

1 Write and solve: A number x increased by 13 is 31.

ANSWER _____

2 Write and solve: 17 less than x is 5.

ANSWER _____

3 Solve: 8x = 56.

ANSWER _____

4 Solve: x/4 = 11.

ANSWER _____

5 Write an inequality: x is at least 14.

ANSWER _____

6 Solve: x + 6 > 19.

ANSWER _____

APPLY IT Show your work

1 The school club can buy zero or more snacks for a meeting. Each snack costs $6, and the club can spend at most $30. Let x be the number of snacks. Write and solve an inequality. x must be a whole number.

WORK SPACE

ANSWER _____

2 A game pass costs 18 points. Jay has x game points and spends 18 points on the pass. He wants to have no more than 10 points left. Write and solve an inequality. Game points are whole numbers.

WORK SPACE

ANSWER _____

CHALLENGE One step up

CHALLENGE

A playlist has x downloaded songs. Its storage rule is x/5 <= 4, and x is a whole number. What values can x have? Explain your reasoning.

_____

_____

ANSWER KEY

Solve the Mystery

GRADE 6 · 6.PAR.7.2

PART 1 · PRACTICE

#	PROBLEM	ANSWER
1	Write and solve: A number x increased by 13 is 31.	**x + 13 = 31; x = 18**
2	Write and solve: 17 less than x is 5.	**x - 17 = 5; x = 22**
3	Solve: 8x = 56.	**x = 7**
4	Solve: x/4 = 11.	**x = 44**
5	Write an inequality: x is at least 14.	**x >= 14**
6	Solve: x + 6 > 19.	**x > 13**

PART 2 · APPLY IT

1. **6x <= 30; 0 <= x <= 5, where x is a whole number** Multiply each possible number of snacks by 6. Divide both sides of 6x <= 30 by 6 to get x <= 5, and the context gives x >= 0.
2. **x - 18 <= 10; 18 <= x <= 28, where x is a whole number** Add 18 to both sides of x - 18 <= 10 to get x <= 28. Jay must also have at least 18 points before spending them.

CHALLENGE

0 <= x <= 20, where x is a whole number. Multiply both sides of x/5 <= 4 by 5 to get x <= 20, and a number of songs cannot be negative.

Accept equivalent equation and inequality forms, such as 13 + x = 31. For contextual count problems, accept only whole-number values in the stated range, including the lower bound required by the situation.