LESSON MAKER PRO

Solve the Situation

Write equations and inequalities for real situations.

GRADE 6 · 6.AF.B

6.AF.B "Use equations and inequalities to represent and solve real-world or mathematical problems."

NAME _____ DATE _____

THE BIG IDEA

Use x for an unknown amount. Write an equation when two amounts are equal, or an inequality when one amount is a limit. To solve, undo operations on both sides.

WORKED EXAMPLE

A puzzle club pays $13 to book a room and $9 per player. The total cost is $58. Write an equation and find the number of players.

1. Let x be the number of players. Write 9x + 13 = 58.
2. Subtract 13 from both sides: 9x = 45.
3. Divide both sides by 9: x = 5.

Answer: 5 players

PRACTICE 6 problems

1 A number plus 12 is 20. Write an equation using x and solve.

ANSWER _____

2 Three times a number is 42. Write an equation using x and solve.

ANSWER _____

3 A number divided by 4, then increased by 6, is 11. Write an equation using x and solve.

ANSWER _____

4 Twice a number plus 8 is at most 30. Write an inequality using x and solve.

ANSWER _____

5 A number minus 3 is greater than 16. Write an inequality using x and solve.

ANSWER _____

6 A number divided by 2 is at least 12. Write an inequality using x and solve.

ANSWER _____

APPLY IT Show your work

1 In a video game, you already have 8 points and earn 6 more points for each level you finish. You need at least 50 points to unlock a badge. Write and solve an inequality for the number of levels you must finish.

WORK SPACE

ANSWER _____

2 At a skate rink, admission costs $8 and skate rental costs $3 per hour. You spent $20. Write and solve an equation for the number of hours you rented skates.

WORK SPACE

ANSWER _____

CHALLENGE One step up

For a movie night, Plan A costs $8 plus $3 per movie. Plan B costs $14 plus $2 per movie. For how many movies will Plan B cost no more than Plan A? Write and solve an inequality. Explain what the whole-number answers mean.

WORK SPACE AND ANSWER

ANSWER KEY

Solve the Situation

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PART 1 · PRACTICE

#	PROBLEM	ANSWER
1	A number plus 12 is 20. Write an equation using x and solve.	**x + 12 = 20; x = 8**
2	Three times a number is 42. Write an equation using x and solve.	**3x = 42; x = 14**
3	A number divided by 4, then increased by 6, is 11. Write an equation using x and solve.	**x/4 + 6 = 11; x = 20**
4	Twice a number plus 8 is at most 30. Write an inequality using x and solve.	**2x + 8 ≤ 30; x ≤ 11**
5	A number minus 3 is greater than 16. Write an inequality using x and solve.	**x - 3 > 16; x > 19**
6	A number divided by 2 is at least 12. Write an inequality using x and solve.	**x/2 ≥ 12; x ≥ 24**

PART 2 · APPLY IT

1. **8 + 6x ≥ 50; x ≥ 7, so at least 7 levels** Subtract 8 from both sides, then divide by 6. The number of levels must be a whole number.
2. **8 + 3x = 20; x = 4 hours** Subtract the $8 admission cost, then divide the remaining $12 by $3 per hour.

CHALLENGE

14 + 2x ≤ 8 + 3x; x ≥ 6. For 6 or more movies, Plan B costs no more than Plan A.

Accept equivalent equations or inequalities that represent the same situation. For the challenge, students should include 6 movies, when the plans cost the same.