LESSON MAKER PRO

Equation Mission

Use inverse operations to solve real-life and mathematical problems.

GRADE 7 · 7.EE.B

CCSS.Math.Content.7.EE.B "Solve real-life and mathematical problems using numerical and algebraic expressions and equations."

NAME _____ DATE _____

UNDO IN REVERSE

To solve an equation, undo operations in reverse order, starting with the operation farthest outside the variable expression. For an equation in the form ax + b = c, undo b first, then divide by a. Check by substituting your value for x.

WORKED EXAMPLE

Solve 6x - 8 = 34.

1. Add 8 to both sides: 6x = 42.
2. Divide both sides by 6: x = 7.
3. Check: 6(7) - 8 = 34.

Answer: x = 7

PRACTICE 6 problems

1 Solve 2x + 9 = 19.

ANSWER _____

2 Solve 5(x - 2) = 45.

ANSWER _____

3 Solve 4 - 2x = -16.

ANSWER _____

4 Solve x/3 + 4 = 12.

ANSWER _____

5 Solve 0.4x + 1.2 = 5.2.

ANSWER _____

6 Solve 3(x + 4) = 39.

ANSWER _____

APPLY IT Show your work

1 A game tournament charges a $4 entry fee plus $2 for each extra game. Your total cost is $22. How many extra games did you play?

WORK SPACE

ANSWER _____

2 You have $31 saved for a new headset that costs at least $51. You earn $4 for each shift helping at a community event. What is the minimum number of shifts you need?

WORK SPACE

ANSWER _____

CHALLENGE One step up

Solve 2(3x - 1) - 4 = x + 21. Show your steps.

WORK SPACE AND ANSWER

ANSWER KEY

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PART 1 · PRACTICE

#	PROBLEM	ANSWER
1	Solve 2x + 9 = 19.	**x = 5**
2	Solve 5(x - 2) = 45.	**x = 11**
3	Solve 4 - 2x = -16.	**x = 10**
4	Solve x/3 + 4 = 12.	**x = 24**
5	Solve 0.4x + 1.2 = 5.2.	**x = 10**
6	Solve 3(x + 4) = 39.	**x = 9**

PART 2 · APPLY IT

1. **9 extra games** Write 2x + 4 = 22. Subtract 4, then divide by 2 to get x = 9.
2. **5 shifts** Write 31 + 4x ≥ 51. Subtract 31 and divide by 4 to get x ≥ 5, so 5 whole shifts are needed.

CHALLENGE

x = 27/5

Accept equivalent equation answers, including x = 5.4 for the challenge. For the second word problem, accept x ≥ 5 if the student also identifies 5 as the minimum whole number of shifts.