LESSON MAKER PRO

Unlock the Unknown

Distribute, combine, and solve.

GRADE 7 · 7.EE.4b

7.EE.4b "Apply the concepts of linear equations and inequalities in one variable to real-world and mathematical situations. Write and solve multi-step linear equations that include the use of the Distributive Property and combining like terms..."

NAME _____ DATE _____

SOLVE IN STEPS

Use the Distributive Property to remove parentheses. Then combine like terms and use inverse operations to get x by itself.

WORKED EXAMPLE

Solve 9(x + 11) + 8x = 184.

1. Distribute: 9x + 99 + 8x = 184
2. Combine like terms: 17x + 99 = 184
3. Subtract 99: 17x = 85
4. Divide by 17: x = 5

Answer: x = 5

PRACTICE 6 problems

1 Solve 2(x + 3) + x = 18.

ANSWER _____

2 Solve 4(x - 2) + x = 27.

ANSWER _____

3 Solve 3(x + 4) + 2x - 1 = 36.

ANSWER _____

4 Solve 18 = 2(3x - 4) + 2x + 2.

ANSWER _____

5 Solve 5(2x - 1) - 3x = 51.

ANSWER _____

6 Solve 4(x + 1) - 2(x - 3) = 22.

ANSWER _____

APPLY IT Show your work

1 At an arcade, two token packs each contain x tokens plus 4 bonus tokens. A third pack contains x tokens with no bonus. You have 44 tokens in all. How many tokens are in each pack before bonuses?

WORK SPACE

ANSWER _____

2 Two friends each buy a game that costs x dollars before a $4 discount. A third friend buys the same game at full price. Together, they pay $64. What is the original price of the game?

WORK SPACE

ANSWER _____

CHALLENGE One step up

A student solves 3(x + 2) - 2(x - 5) = 24 and writes 3x + 6 - 2x - 10 = 24, so x = 28. Find the error and give the correct value of x. Explain in one sentence.

WORK SPACE AND ANSWER

ANSWER KEY

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PART 1 · PRACTICE

#	PROBLEM	ANSWER
1	Solve 2(x + 3) + x = 18.	**x = 4**
2	Solve 4(x - 2) + x = 27.	**x = 7**
3	Solve 3(x + 4) + 2x - 1 = 36.	**x = 5**
4	Solve 18 = 2(3x - 4) + 2x + 2.	**x = 3**
5	Solve 5(2x - 1) - 3x = 51.	**x = 8**
6	Solve 4(x + 1) - 2(x - 3) = 22.	**x = 6**

PART 2 · APPLY IT

1. **12 tokens** Write 2(x + 4) + x = 44. Then 3x + 8 = 44, so x = 12.
2. **$24** Write 2(x - 4) + x = 64. Then 3x - 8 = 64, so x = 24.

CHALLENGE

The minus sign makes -2(x - 5) equal -2x + 10, so x + 16 = 24 and x = 8.

Accept equivalent equations in the work shown. In the challenge, the explanation must identify the sign error when distributing -2.