LESSON MAKER PRO

Balance It Out

Use addition and subtraction to solve for x.

GRADE 6 · MA.6.AR.2.2

MA.6.AR.2.2 "Write and solve one-step equations in one variable within a mathematical or real-world context using addition and subtraction, where all terms and solutions are integers."

NAME _____ DATE _____

KEEP BOTH SIDES EQUAL

To solve an equation, undo the number added to or subtracted from x. Do the same inverse operation to both sides so the equation stays balanced.

WORKED EXAMPLE

Solve: x - 15 = 7

1. Add 15 to both sides.
2. x - 15 + 15 = 7 + 15
3. x = 22

Answer: x = 22

PRACTICE 6 problems

1 Solve: x + 8 = 21

ANSWER _____

2 Solve: x - 14 = 9

ANSWER _____

3 Solve: -6 + x = 5

ANSWER _____

4 Solve: x + (-10) = -18

ANSWER _____

5 Solve: x - (-6) = 2

ANSWER _____

6 Solve: 18 = x + 25

ANSWER _____

APPLY IT Show your work

1 At the start of a game round, Leo has x coins. He earns 18 coins and then has 53 coins. Write and solve an equation to find how many coins Leo had at the start.

WORK SPACE

ANSWER _____

2 The drama club sold x tickets before refunds. After 16 refunds, 29 tickets remained sold. Write and solve an equation to find how many tickets were sold before refunds.

WORK SPACE

ANSWER _____

CHALLENGE One step up

A student says that x + (-9) = 14 has the solution x = 5. Is the student correct? Explain your reasoning and give the correct solution.

WORK SPACE AND ANSWER

ANSWER KEY

Balance It Out

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PART 1 · PRACTICE

#	PROBLEM	ANSWER
1	Solve: x + 8 = 21	**x = 13**
2	Solve: x - 14 = 9	**x = 23**
3	Solve: -6 + x = 5	**x = 11**
4	Solve: x + (-10) = -18	**x = -8**
5	Solve: x - (-6) = 2	**x = -4**
6	Solve: 18 = x + 25	**x = -7**

PART 2 · APPLY IT

1. **x + 18 = 53; x = 35** Subtract 18 from both sides of x + 18 = 53. Leo started with 35 coins.
2. **x - 16 = 29; x = 45** Add 16 to both sides of x - 16 = 29. The club sold 45 tickets before refunds.

CHALLENGE

No. x = 23, because adding 9 to both sides gives x = 23.

Accept equivalent equation forms for the word problems, such as 53 = x + 18. For the challenge, accept any explanation showing that 9 must be added to both sides.