LESSON MAKER PRO

Two-Step Number Quest

Write equations, solve, and check with estimates.

GRADE 3 · 3.OA.D.8

CCSS.Math.Content.3.OA.D.8 "Solve two-step word problems using the four operations. Represent these problems using equations with a letter standing for the unknown quantity..."

NAME _____ DATE _____

SOLVE IN ORDER

Use two operations and a letter for the unknown. Parentheses show what to calculate first. Check with rounding or compatible numbers that are easy to calculate.

WORKED EXAMPLE

A museum has 5 rows of 9 seats. Then 11 seats are removed. How many seats are left?

1. Write n = (5 × 9) - 11.
2. Multiply: 5 × 9 = 45.
3. Subtract: 45 - 11 = 34.
4. Round to check: 5 × 10 - 10 = 40, so 34 is reasonable.

Answer: n = 34

PRACTICE 6 problems

For each problem, write an equation with n and solve. Estimate using rounding or compatible numbers; name your method.

1 There are 3 bags with 12 marbles in each bag. Then 14 marbles are used. Find n.

ANSWER _____

2 Fifty-six stickers are shared equally among 4 students. Each student gets 3 more stickers. Find n.

ANSWER _____

3 Thirty-two game cards are shared equally by 4 players. Then each player earns 18 more cards. Find n.

ANSWER _____

4 A camp has 72 trail mix bags. After 12 bags are given away, the rest are shared equally by 3 classes. Find n.

ANSWER _____

5 A player earns 3 points for each of 17 levels and then gets 8 bonus points. Find n.

ANSWER _____

6 Ninety-six beads are put into 8 equal groups. Then 4 beads are taken from each group. Find n.

ANSWER _____

APPLY IT Show your work

1 Use Ava's bar. On Tuesday, Ava read 8 fewer pages than on Monday. How many pages did Ava read on Monday and Tuesday altogether? Write an equation with n. Use rounding to check your answer.



ANSWER

2 In a video game, Priya earns 4 tickets for each of 18 completed levels. She spends 14 tickets on a game item. How many tickets does she have left? Write an equation with n. Use rounding to check your answer.

CHALLENGE One step up

A club shares 96 trading cards equally into 8 prize bags. Then 3 more cards are added to each bag. How many cards are in each bag? Write an equation with n, solve it, and explain how each operation matches the story.

ANSWER KEY

Two-Step Number Quest

GRADE 3 · 3.OA.D.8

PART 1 · PRACTICE

#	PROBLEM	ANSWER
1	There are 3 bags with 12 marbles in each bag. Then 14 marbles are used. Find n.	**n = (3 × 12) - 14 = 22; estimate: 3 × 10 - 10 = 20**
2	Fifty-six stickers are shared equally among 4 students. Each student gets 3 more stickers. Find n.	**n = (56 ÷ 4) + 3 = 17; estimate: 60 ÷ 4 + 0 = 15**
3	Thirty-two game cards are shared equally by 4 players. Then each player earns 18 more cards. Find n.	**n = (32 ÷ 4) + 18 = 26; compatible-number estimate: 40 ÷ 4 + 20 = 30; 40 is chosen for easy division, not as 32 rounded to the nearest ten**
4	A camp has 72 trail mix bags. After 12 bags are given away, the rest are shared equally by 3 classes. Find n.	**n = (72 - 12) ÷ 3 = 20; estimate: (70 - 10) ÷ 3 = 20**
5	A player earns 3 points for each of 17 levels and then gets 8 bonus points. Find n.	**n = (3 × 17) + 8 = 59; estimate: 3 × 20 + 10 = 70**
6	Ninety-six beads are put into 8 equal groups. Then 4 beads are taken from each group. Find n.	**n = (96 ÷ 8) - 4 = 8; estimate: 100 ÷ 10 - 0 = 10**

PART 2 · APPLY IT

1. **n = 26 + (26 - 8) = 44; estimate: 30 + (30 - 10) = 50** Ava read 18 pages on Tuesday because 26 - 8 = 18. Add Monday and Tuesday: 26 + 18 = 44.
2. **n = (4 × 18) - 14 = 58; estimate: (4 × 20) - 10 = 70** First find the tickets earned: 4 × 18 = 72. Then subtract the 14 tickets spent: 72 - 14 = 58.

CHALLENGE

n = (96 ÷ 8) + 3 = 15. Divide by 8 because the cards are shared among 8 bags. Add 3 because each bag gets 3 more cards.

Accept equivalent equations that show the correct order of operations and use a letter for the unknown. Accept reasonable estimates made by rounding or using compatible numbers.