

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

Some word problems need two operations. Use a letter such as n for the unknown amount, and use parentheses when a calculation happens first. Round numbers to tens to make an estimate that helps you check whether your answer makes sense.

WORKED EXAMPLE

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

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

Answer: $n = 34$

PRACTICE 6 problems

- 1** There are 3 bags with 12 marbles in each bag. Then 14 marbles are used. Write an equation with n and solve. Give a rounded estimate.

ANSWER _____

- 2** Fifty-six stickers are shared equally among 4 students. Each student gets 3 more stickers. Write an equation with n and solve. Give a rounded estimate.

ANSWER _____

- 3** Thirty-two game cards are shared equally by 4 players. Then each player earns 18 more cards. Write an equation with n and solve. Give a rounded estimate.

ANSWER _____

- 4** A camp has 72 trail mix bags. After 12 bags are given away, the rest are shared equally by 3 classes. Write an equation with n and solve. Give a rounded estimate.

ANSWER _____

- 5** A player earns 3 points for each of 17 levels and then gets 8 bonus points. Write an equation with n and solve. Give a rounded estimate.

ANSWER _____

- 6** Ninety-six beads are put into 8 equal groups. Then 4 beads are taken from each group. Write an equation with n and solve. Give a rounded estimate.

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.

PAGES READ ON MONDAY



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.

WORK SPACE

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.

WORK SPACE AND ANSWER

PART 1 • PRACTICE

#	PROBLEM	ANSWER
1	There are 3 bags with 12 marbles in each bag. Then 14 marbles are used. Write an equation with n and solve. Give a rounded estimate.	$n = (3 \times 12) - 14 = 22$; estimate: $3 \times 10 - 10 = 20$
2	Fifty-six stickers are shared equally among 4 students. Each student gets 3 more stickers. Write an equation with n and solve. Give a rounded estimate.	$n = (56 \div 4) + 3 = 17$; estimate: $60 \div 4 + 0 = 15$
3	Thirty-two game cards are shared equally by 4 players. Then each player earns 18 more cards. Write an equation with n and solve. Give a rounded estimate.	$n = (32 \div 4) + 18 = 26$; estimate: $40 \div 4 + 20 = 30$
4	A camp has 72 trail mix bags. After 12 bags are given away, the rest are shared equally by 3 classes. Write an equation with n and solve. Give a rounded estimate.	$n = (72 - 12) \div 3 = 20$; estimate: $(70 - 10) \div 3 = 20$
5	A player earns 3 points for each of 17 levels and then gets 8 bonus points. Write an equation with n and solve. Give a rounded estimate.	$n = (3 \times 17) + 8 = 59$; estimate: $3 \times 20 + 10 = 70$
6	Ninety-six beads are put into 8 equal groups. Then 4 beads are taken from each group. Write an equation with n and solve. Give a rounded estimate.	$n = (96 \div 8) - 4 = 8$; estimate: $100 \div 10 - 0 = 10$

PART 2 • APPLY IT

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

CHALLENGE

$n = (96 \div 8) + 3 = 15$. 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.