LESSON MAKER PRO

Does It Add Up?

Estimate to check multi-step answers.

GRADE 4 · 4.OA.A.3.b

4.OA.A.3.b "Determine reasonableness of answers for multi-step word problems, using mental computation and estimation strategies including rounding."

NAME _____ DATE _____

CHECK WITH AN ESTIMATE

Round numbers with two or more digits to the nearest ten. Keep one-digit numbers the same, and do the steps in the order the problem gives. Compare your estimate with the reported answer. A close estimate does not prove the answer is exact.

WORKED EXAMPLE

A museum sold 238 tickets on Monday and 154 on Tuesday, then refunded 109 tickets. A worker reports 500 tickets after refunds. Is that reasonable?

1. Round: 238 becomes 240, 154 becomes 150, and 109 becomes 110.
2. Estimate: 240 + 150 - 110 = 280.
3. Compare: 500 is far from 280.

Answer: No, 500 is not reasonable.

PRACTICE 6 problems

1 A game has 67 players on one team and 84 on another. Then 23 players leave. A coach reports 128 players left. Estimate and decide: Is 128 reasonable?

ANSWER _____

2 A club has 4 boxes of 42 stickers and gives away 58 stickers. A student reports 250 stickers left. Estimate and decide: Is 250 reasonable?

ANSWER _____

3 A library gets 96 new books and 73 donated books, then puts 38 in storage. A student reports 131 books on shelves. Estimate and decide: Is 131 reasonable?

ANSWER _____

4 A class fills 3 jars with 76 beads each, then uses 49 beads. A student reports 179 beads left. Estimate and decide: Is 179 reasonable?

ANSWER _____

5 A fair sells 125 tickets in the morning and 68 later. Then 52 tickets are returned. A student reports 241 tickets kept. Estimate and decide: Is 241 reasonable?

ANSWER _____

6 A shop has 175 badges. It packs 5 badges in each bag, then sells 21 bags. A student reports 14 bags left. Estimate and decide: Is 14 reasonable?

ANSWER _____

APPLY IT Show your work

1 At a school arcade, 7 teams each earn 39 tickets. They spend 86 tickets on prizes. A poster says they have 187 tickets left. Estimate to check the poster, then find the exact number of tickets left.

WORK SPACE

ANSWER _____

2 A school movie night sells 146 tickets online and 87 at the door. Each ticket costs $4. The class treasurer reports $600 in ticket sales. Estimate to check the report, then find the exact amount earned.

WORK SPACE

ANSWER _____

CHALLENGE One step up

A student adds 182 and 79, then subtracts 63. The student reports 200. Use rounding to decide whether 200 seems reasonable. Then find the exact answer and explain why estimating alone cannot show whether 200 is exact.

WORK SPACE AND ANSWER

ANSWER KEY

Does It Add Up?

GRADE 4 · 4.OA.A.3.b

PART 1 · PRACTICE

#	PROBLEM	ANSWER
1	A game has 67 players on one team and 84 on another. Then 23 players leave. A coach reports 128 players left. Estimate and decide: Is 128 reasonable?	**70 + 80 - 20 = 130. Yes, 128 is reasonable.**
2	A club has 4 boxes of 42 stickers and gives away 58 stickers. A student reports 250 stickers left. Estimate and decide: Is 250 reasonable?	**4 × 40 - 60 = 100. No, 250 is not reasonable.**
3	A library gets 96 new books and 73 donated books, then puts 38 in storage. A student reports 131 books on shelves. Estimate and decide: Is 131 reasonable?	**100 + 70 - 40 = 130. Yes, 131 is reasonable.**
4	A class fills 3 jars with 76 beads each, then uses 49 beads. A student reports 179 beads left. Estimate and decide: Is 179 reasonable?	**3 × 80 - 50 = 190. Yes, 179 is reasonable.**
5	A fair sells 125 tickets in the morning and 68 later. Then 52 tickets are returned. A student reports 241 tickets kept. Estimate and decide: Is 241 reasonable?	**130 + 70 - 50 = 150. No, 241 is not reasonable.**
6	A shop has 175 badges. It packs 5 badges in each bag, then sells 21 bags. A student reports 14 bags left. Estimate and decide: Is 14 reasonable?	**180 ÷ 5 - 20 = 16. Yes, 14 is reasonable.**

PART 2 · APPLY IT

1. **The estimate is 7 × 40 - 90 = 190, so 187 is reasonable. The exact number left is 187 tickets.** Calculate 7 × 39 - 86 = 273 - 86 = 187.
2. **The estimate is (150 + 90) × 4 = $960, so $600 is not reasonable. The exact amount earned is $932.** Add 146 + 87 = 233 tickets. Then calculate 233 × $4 = $932.

CHALLENGE

The estimate is 180 + 80 - 60 = 200, so 200 seems reasonable. The exact answer is 182 + 79 - 63 = 198. Estimating gives a nearby answer, not an exact check.

Accept other clear mental estimates that support the same reasonableness decisions. In the challenge, students should distinguish a reasonable estimate from an exact answer.