

Operation Mission

Estimate, solve, and check multi-step number problems.

GRADE 4 • 4.NR.2.5

4.NR.2.5 "Solve multi-step problems using addition, subtraction, multiplication, and division involving whole numbers. Use mental computation and estimation strategies to justify the reasonableness of solutions."

NAME _____

DATE _____

CHOOSE AN ORDER

First, do multiplication and division before addition and subtraction. When multiplication and division appear at the same level, work from left to right. When addition and subtraction appear at the same level, work from left to right, then use friendly numbers to estimate whether your answer makes sense.

WORKED EXAMPLE

Solve: $96 \div 8 \times 4 + 13$

1. $96 \div 8 = 12$.

2. $12 \times 4 = 48$.

3. $48 + 13 = 61$.

Answer: 61

PRACTICE 6 problems

1 Estimate, then solve: $54 + 72 \div 9$

ANSWER _____

2 Estimate, then solve: $132 \div 11 \times 17$

ANSWER _____

3 Estimate, then solve: $70 - 6 \times 9$

ANSWER _____

4 Estimate, then solve: $150 \div 15 + 28$

ANSWER _____

5 Estimate, then solve: $18 \times 14 - 46$

ANSWER _____

6 Estimate, then solve: $168 \div 14 + 39$

ANSWER _____

APPLY IT Show your work

- 1** A game club buys 9 boxes of trading cards. Each box has 26 cards. The club gives away 54 cards as prizes, then shares the remaining cards equally among 9 teams. How many cards does each team get? Estimate first.

WORK SPACE

ANSWER _____

- 2** At an arcade, 6 friends split 144 prize tickets equally. Each friend wins 22 more tickets, then spends 19 tickets on a small prize. How many tickets does each friend have now? Estimate first.

WORK SPACE

ANSWER _____

CHALLENGE One step up

CHALLENGE

An art club has 18 packs of markers with 25 markers in each pack. The club uses 72 markers for posters and shares the rest equally among 9 tables. How many markers does each table get? Estimate and explain why your exact answer is reasonable.

PART 1 • PRACTICE

#	PROBLEM	ANSWER
1	Estimate, then solve: $54 + 72 \div 9$	62; estimate about 60
2	Estimate, then solve: $132 \div 11 \times 17$	204; estimate about 200
3	Estimate, then solve: $70 - 6 \times 9$	16; estimate about 20
4	Estimate, then solve: $150 \div 15 + 28$	38; estimate about 40
5	Estimate, then solve: $18 \times 14 - 46$	206; estimate about 200
6	Estimate, then solve: $168 \div 14 + 39$	51; estimate about 50

PART 2 • APPLY IT

- 20 cards per team; estimate about 20 cards per team** Multiply 9×26 to get 234 cards, then subtract 54 to get 180. Divide 180 by 9 to get 20.
- 27 tickets; estimate about 25 tickets** Divide 144 by 6 to get 24 tickets each. Then calculate $24 + 22 - 19$ to get 27.

CHALLENGE

42 markers per table. An estimate of about 40 is reasonable because 18×25 is close to 450, and after subtracting about 70, sharing about 380 markers among 9 tables gives a little more than 40.

Accept reasonable estimates that are close to the exact answer and use sensible rounding or compatible numbers. For $132 \div 11 \times 17$, students must divide first, then multiply from left to right.