



Multi-Digit Operations Quest

Name: _____

Grade: 5

Date: _____

Add, subtract, multiply, and divide large numbers. Use estimation to check reasonableness. Show partial products / long division steps where space allows.

Part 1 · Addition & Subtraction + / -

(1. $48,726 + 9,408 =$ _____

(2. $305,900 - 27,655 =$ _____

(3. $409,218 + 52,731 =$ _____

(4. $800,000 - 476,889 =$ _____

(5. $67,094 + 18,506 =$ _____

(6. $52,010 - 39,845 =$ _____

Part 2 · Multiplication (1-2 Digit Factors) ×

(7. $483 \times 7 =$ _____

(8. $604 \times 8 =$ _____

(9. $312 \times 24 =$ _____

(10. $508 \times 37 =$ _____

(11. $2,400 \times 6 =$ _____

(12. $1,208 \times 15 =$ _____

Part 3 · Division ÷

(13. $8,568 \div 9 =$ _____

(14. $9,324 \div 6 =$ _____

15. $6,372 \div 12 =$ _____

16. $4,725 \div 15 =$ _____

17. $12,444 \div 18 =$ _____

18. $7,056 \div 16 =$ _____

Part 4 · Estimation & Reasonableness EST

19. Estimate $49,812 + 5,089 \approx$
_____ (nearest thousand)

20. Estimate $8,764 - 3,089 \approx$
_____ (nearest thousand)

21. $298 \times 51 \approx$ _____ (round to tens)

22. $4,980 \div 48 \approx$ _____
(compatible numbers)

23. Is $7,502 + 19,499 \approx 27,000$
reasonable? (Yes/No)

24. Pick closer to 30,000: $14,688 + 15,210$ or $14,688 + 16,790$?

Part 5 · Word Problems REAL

INVENTORY 25. A store sold 18,756 toys one year and 21,489 the next. Total 2 years = _____

FARM 26. A farm harvested 408 crates per day for 37 days. Estimate ($\times 40$) then exact: Est $\approx$ _____ Exact = _____

FUNDRAISER 27. Goal 125,000. Raised $48,920 + 37,580 + 19,450$. Still needed = _____

PRINT 28. A printer outputs 1,208 pages each hour for 15 hours. Total pages = _____

SHIPPING 29. 9,324 items packed equally into 6 trucks. Each truck = _____

TRACK 30. 6,372 runners split into 12 equal starting groups. Group size = _____

Part 6 · Error Analysis FIX

31. Error: Student wrote $312 \times 24 = 312 \times 20 + 312 \times 2 = 6,240 + 624 = 6,764$ (correct?). If not, correct product = _____ ; mistake = _____

32. Error: $8,568 \div 9$ written as 1,052 remainder 0. Correct quotient = _____ ; highlight place they mis-subtracted.

33. Student rounded 49,812 to 40,000 (nearest thousand). Correct rounded value = _____ ; why? _____

Part 7 · Multi-Step Challenge CHALLENGE

34. A factory makes 2,400 gadgets per shift, 3 shifts/day for 6 days. Total = _____

35. A charity sends 7,056 books equally to 16 schools. Each gets _____. If 4 more schools join (same share), new per-school $\approx$ _____ (round previous share)

36. Compute $(312 \times 24) - (6,372 \div 12) =$ _____

37. A builder needs 508 beams; each crate holds 37. Crates needed (round up) = _____

38. Choose better check for $305,900 - 27,655$ (inverse addition / estimation).
Selected: _____ ; quick proof: _____

39. Reflection: Which operation felt strongest today? _____

Answer Key

1. 58,134
2. 278,245
3. 461,949
4. 323,111
5. 85,600
6. 12,165
7. 3,381
8. 4,832
9. 7,488
10. 18,796
11. 14,400
12. 18,120
13. 952
14. 1,554
15. 531
16. 315
17. 691
18. 441
19. $\approx 55,000$
20. $\approx 6,000$
21. $\approx 15,000$ (300×50)
22. ≈ 100 ($4,800 \div 48$)
23. Yes ($\sim 7,500 + 19,500 = 27,000$)
24. $14,688 + 15,210$ ($\approx 29,900$)
25. 40,245
26. Est 16,320; Exact 15,096 (408×37)
27. 19,050
28. 18,120
29. 1,554
30. 531
31. Wrong; correct 7,488; forgot $312 \times 4 = 1,248$ not 312×2
32. 952; subtraction in middle step wrong
33. 50,000; hundreds digit 8 ≥ 5
34. 43,200 ($2,400 \times 3 \times 6$)
35. 441; new share $\approx 441 \times 16 / 20 \approx 353$ (or recompute $7,056 \div 20 = 352.8$)
36. $7,488 - 531 = 6,957$
37. 14 ($508 \div 37 \approx 13.73 \rightarrow 14$)
38. Inverse addition; $278,245 + 27,655 = 305,900$

39. Varies

Accept equivalent estimation ranges ($\pm$ one rounding step). Reflection varies. For #35 rounding explanation accepted if reasonable.