

Grade 6 · Multi-Digit Division · Test Answer Key

Common Core 6.NS.B.2 · mathovore.fr

This answer key shows the full solution for each test question and explains how the 20 points are awarded. Partial credit is given when a student sets up the division correctly but makes one arithmetic slip.

Grade 6 Common Core: 6.NS.B.2

Question 1: Divide with one-digit and two-digit divisors (2 points)

a) 7 into 35 is 5 (35), remainder 0. Bring down 2: 7 does not go into 2, write 0. Bring down 8 to get 28: $4 \times 7 = 28$. Quotient **504**. Check $7 \times 504 = 3,528$.

b) 18 into 19 is 1, $19 - 18 = 1$. Bring down 9 to get 19: 1, remainder 1. Bring down 8 to get 18: 1, remainder 0. Quotient **111**. Check $18 \times 111 = 1,998$.

Scoring: 1 point for each correct quotient.

Question 2: Quotients with larger divisors (2 points)

a) 38 into 95 is 2 (76), $95 - 76 = 19$. Bring down 7 to get 197: $5 \times 38 = 190$, remainder 7. Bring down 6 to get 76: $2 \times 38 = 76$, remainder 0. Quotient **252**.

b) 52 into 64 is 1 (52), $64 - 52 = 12$. Bring down 0 to get 120: $2 \times 52 = 104$, remainder 16. Bring down 7 to get 167: $3 \times 52 = 156$, remainder 11. Quotient **123 R 11**. Check $52 \times 123 + 11 = 6,396 + 11 = 6,407$.

Scoring: 1 point for each correct answer. In part b, the remainder must be included.

$$\begin{array}{r} 252 \\ 38 \overline{) 9576} \\ \underline{76} \\ 197 \\ \underline{190} \\ 76 \\ \underline{76} \\ 0 \end{array}$$

$$9,576 \div 38 = 252$$

Question 3: Estimate and divide (2 points)

a) $8,000 \div 40 = 200$. Any estimate from 190 to 210 that uses compatible numbers earns the point.

b) 41 into 81 is 1 (41), $81 - 41 = 40$. Bring down 1 to get 401: $9 \times 41 = 369$, remainder 32. Bring down 2 to get 322: $7 \times 41 = 287$, remainder 35. Quotient **197 R 35**. Check $41 \times 197 + 35 = 8,077 + 35 = 8,112$.

Scoring: 1 point for a reasonable estimate; 1 point for the exact quotient and remainder.

$$\begin{array}{r}
 \overline{197} \\
 41 \overline{) 8112} \\
 \underline{41} \\
 401 \\
 \underline{- 369} \\
 322 \\
 \underline{- 287} \\
 35
 \end{array}$$

$$8,112 \div 41 = 197 \text{ R } 35$$

Question 4: Find the error (2 points)

Check: $27 \times 168 = 4,536$, which is not 4,806, so Liam is not correct.

Divide: 27 into 48 is 1 (27), $48 - 27 = 21$. Bring down 0 to get 210: $7 \times 27 = 189$, remainder 21. Bring down 6 to get 216: $8 \times 27 = 216$, remainder 0. Check $27 \times 178 = 4,806$.

Liam is not correct; the quotient is 178.

Scoring: 1 point for showing that $27 \times 168 \neq 4,806$; 1 point for the correct quotient 178.

Question 5: Vans for a trip (2 points)

$389 \div 14 = 27 \text{ R } 11$, because $14 \times 27 = 378$ and $389 - 378 = 11$. Twenty-seven vans seat 378 students, so 11 students still need a seat.

28 vans

Scoring: 1 point for the division (27 R 11); 1 point for rounding up to 28 with a reason.

Question 6: Concert tickets (2 points)

$250 \div 16 = 15 \text{ R } 10$, because $16 \times 15 = 240$ and $250 - 240 = 10$.

He can buy 15 tickets and has \\$10 left.

Scoring: 1 point for 15 tickets; 1 point for \\$10 left.

Question 7: Pencil packing (3 points)

a) $5,880 \div 24$: 24 into 58 is 2 (48), remainder 10. Bring down 8 to get 108: $4 \times 24 = 96$, remainder 12. Bring down 0 to get 120: $5 \times 24 = 120$. Quotient **245 boxes**.

b) $245 \div 15 = 16 \text{ R } 5$, because $15 \times 16 = 240$ and $245 - 240 = 5$. **16 full cartons and 5 boxes left over.**

Scoring: 1 point for part a; in part b, 1 point for 16 full cartons and 1 point for 5 boxes left over.

Question 8: Work backward from a quotient (3 points)

a) The number is $23 \times 64 + 9 = 1,472 + 9 = \mathbf{1,481}$.

b) $1,481 \div 31$: 31 into 148 is 4 (124), remainder 24. Bring down 1 to get 241: $7 \times 31 = 217$, remainder 24. Quotient **47 R 24**. Check $31 \times 47 + 24 = 1,457 + 24 = 1,481$.

Scoring: in part a, 1 point for multiplying quotient by divisor and 1 point for adding the remainder; 1 point for part b.

Question 9: Weekly earnings (2 points)

a) $1,404 \div 36 = 39$, because $36 \times 39 = 1,404$. **\\$39 per week.**

b) $2,145 \div 39 = 55$, because $39 \times 55 = 2,145$. **55 weeks.**

Scoring: 1 point for each part.

Total
20 points