Multi-Digit Division

Apply the skill to decisions and designs

Name _____ **Date** _____ **Score** _____ / 8

QUICK REVIEW

Divide by making equal groups. $158 \div 6 = 26$ remainder 2 because $6 \times 20 = 120$, $38 - 36 = 2$, and $6 \times 26 + 2 = 158$. A remainder must be smaller than the divisor.

Worked example

Find $936 \div 4$ using partial quotients.

1. Take 230 groups: $4 \times 230 = 920$; $936 - 920 = 16$.
2. Take 4 more groups: $4 \times 4 = 16$; $16 - 16 = 0$.
3. The quotient is $230 + 4 = 234$; check $4 \times 234 + 0 = 936$ and $0 < 4$.
Answer: 234.

Practice Problems

Show your thinking.

1. Share $1{,}248$ cards equally among 4 classes. Find each share.

2. Pack $2{,}037$ beads in bags of 9. Find full bags and leftover beads.

3. Cut $1{,}750$ cm into 7 equal lengths. Find each length.

4. Pack $1{,}586$ pencils in bundles of 5. Find full bundles and loose pencils.

5. A store says $1{,}025$ eggs fill 170 six-egg cartons with 5 left. Is the arithmetic correct?

6. A bus planner divides 214 riders by 8 seats and orders 26 vans. Fix the order.

7. A workshop fills 93 bags of 7 bolts and has 2 bolts left. Find the original stock.

8. Draw equal shares for 456 as $400 + 56$ divided among 8 teams. Find each share.

Part	Each team
400	☐
56	☐

Answer Key

1. 312 cards per class.
2. 226 full bags; 3 beads left.
3. 250 cm per length.
4. 317 full bundles; 1 loose pencil.
5. Yes; 170 full cartons and 5 eggs.
6. 27 vans.
7. 653 bolts.
8. 57 items.

Step-by-Step Solutions

Follow each calculation, then check your own work.

Problem 1

1. Give each class 300 cards: $4 \times 300 = 1200$ cards, leaving $1248 - 1200 = 48$.

2. Share the remaining $48 \div 4 = 12$ cards per class.

3. Each class gets $300 + 12 = 312$ cards; $4 \times 312 = 1248$ cards checks.

Problem 2

1. Take 220 groups: $9 \times 220 = 1980$; $2037 - 1980 = 57$.

2. Take 6 more groups: $9 \times 6 = 54$; $57 - 54 = 3$.

3. The quotient is $220 + 6 = 226$; check $9 \times 226 + 3 = 2037$ and $3 < 9$. That means 226 full bags and 3 loose beads.

Problem 3

1. Use 200 cm for each of the 7 pieces: $7 \times 200 = 1400$ cm, leaving $1750 - 1400 = 350$ cm.

2. Each piece gets $350 \div 7 = 50$ more cm.

3. Each length is $200 + 50 = 250$ cm. Check: $7 \times 250 = 1750$ cm.

Problem 4

1. Take 310 groups: $5 \times 310 = 1550$; $1586 - 1550 = 36$.

2. Take 7 more groups: $5 \times 7 = 35$; $36 - 35 = 1$.

3. The quotient is $310 + 7 = 317$; check $5 \times 317 + 1 = 1586$ and $1 < 5$. That means 317 full bundles and 1 loose pencil.

Problem 5

1. $6 \times 170 = 1{,}020$ eggs fill the cartons.

2. $1{,}025 - 1{,}020 = 5$ eggs remain.

3. $5 < 6$, so no additional full carton is possible.

Problem 6

1. $8 \times 26 = 208$ seats.

2. $214 - 208 = 6$ riders still need seats.

3. One more van gives $27 \times 8 = 216$ seats.

Problem 7

1. $93 \times 7 = 651$ bolts are bagged.

2. $651 + 2 = 653$ bolts were in stock.

3. $653 \div 7 = 93$ remainder 2 checks it.

Problem 8

1. $400 \div 8 = 50$ items per team.

2. $56 \div 8 = 7$ more items per team.

3. $50 + 7 = 57$ and $8 \times 57 = 456$.

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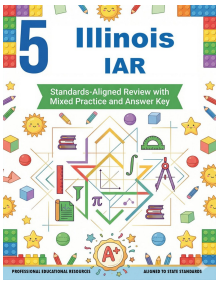

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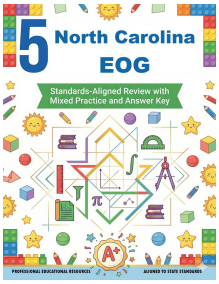

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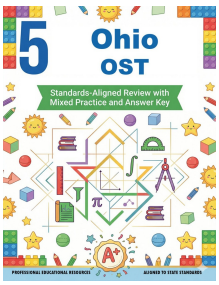

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