Multi-Digit Division

Explore ideas and representations

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. Find $672 \div 3$.

2. Divide $1{,}456$ by 7.

3. Find the quotient and remainder for $895 \div 4$.

4. Use place-value groups to find $3{,}024 \div 6$.

5. Fix: $647 \div 3 = 21$ remainder 17.

6. A division by 7 has quotient 84 and remainder 3. Find the dividend.

7. Complete the group model for $528 \div 4$: $500 + 28$ shared among 4.

Part	Each of 4 shares
500	☐
28	☐

8. 97 children need cars with 4 seats. How many cars are needed?

Answer Key

1. 224.
2. 208.
3. 223 remainder 3.
4. 504.
5. 215 remainder 2.
6. 591.
7. 132.
8. 25 cars.

Step-by-Step Solutions

Follow each calculation, then check your own work.

Problem 1

1. Take 220 groups: $3 \times 220 = 660$; $672 - 660 = 12$.
2. Take 4 more groups: $3 \times 4 = 12$; $12 - 12 = 0$.
3. The quotient is $220 + 4 = 224$; check $3 \times 224 + 0 = 672$ and $0 < 3$.

Problem 2

1. Take 200 groups: $7 \times 200 = 1400$; $1456 - 1400 = 56$.
2. Take 8 more groups: $7 \times 8 = 56$; $56 - 56 = 0$.
3. The quotient is $200 + 8 = 208$; check $7 \times 208 + 0 = 1456$ and $0 < 7$.

Problem 3

1. Take 220 groups: $4 \times 220 = 880$; $895 - 880 = 15$.
2. Take 3 more groups: $4 \times 3 = 12$; $15 - 12 = 3$.
3. The quotient is $220 + 3 = 223$; check $4 \times 223 + 3 = 895$ and $3 < 4$.

Problem 4

1. Take 500 groups: $6 \times 500 = 3000$; $3024 - 3000 = 24$.
2. Take 4 more groups: $6 \times 4 = 24$; $24 - 24 = 0$.
3. The quotient is $500 + 4 = 504$; check $6 \times 504 + 0 = 3024$ and $0 < 6$.

Problem 5

1. $3 \times 200 = 600$; $647 - 600 = 47$.
2. $3 \times 15 = 45$; $47 - 45 = 2$.
3. $200 + 15 = 215$ and $3 \times 215 + 2 = 647$; $2 < 3$.

Problem 6

1. $7 \times 84 = 588$.
2. Add the remainder: $588 + 3 = 591$.
3. $591 \div 7 = 84$ remainder 3; $3 < 7$.

Problem 7

1. $500 \div 4 = 125$.
2. $28 \div 4 = 7$.
3. $125 + 7 = 132$; $4 \times 132 = 528$.

Problem 8

1. $97 \div 4 = 24$ remainder 1.
2. 24 cars seat 96, leaving 1 child.
3. Use $24 + 1 = 25$ cars; $25 \times 4 = 100$ seats.

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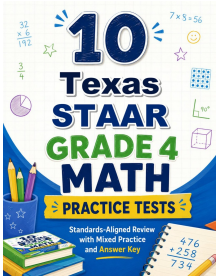

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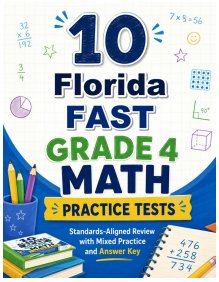

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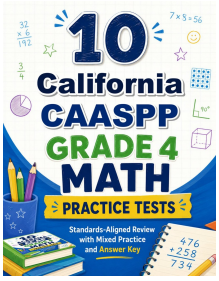

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