Multi-Digit Division

Multi-digit division: Models and calculations

Name _____ **Date** _____ **Score** _____ / 6

QUICK REVIEW

Break a dividend into convenient multiples, combine partial quotients, and check divisor $\times$ quotient $+$ remainder $=$ dividend. For $158/12$, $120/12 = 10$ and $36/12 = 3$, leaving 2: quotient 13 R2, since $12 \times 13 + 2 = 158$. A remainder must be smaller than the divisor.

Worked example

Divide 936 by 24.

1. Use $24 \times 30 = 720$; $936 - 720 = 216$ remains.
2. $216 = 24 \times 9 + 0$, so quotient $= 30 + 9 = 39$ with remainder 0.
3. Check $24 \times 39 + 0 = 936$ and $0 < 24$.

Answer: 39.

Practice Problems

Show your thinking.

1. Compute $864 \div 16$ using partial quotients.

2. Divide 1375 by 25.

3. Find quotient and remainder for $1027 \div 18$.

4. 1512 stickers are shared equally among 28 classes. How many per class?

5. Find the missing factor: $21 \times \square = 756$.

6. Check whether $985 \div 32 = 30$ R25.

Answer Key

1. 54.
2. 55.
3. 57 R1.
4. 54.
5. 36.
6. 30 R25.

Step-by-Step Solutions

Follow each calculation, then check your own work.

Problem 1

1. Use $16 \times 50 = 800$; $864 - 800 = 64$ remains.
2. $64 = 16 \times 4 + 0$, so quotient $= 50 + 4 = 54$ with remainder 0.
3. Check $16 \times 54 + 0 = 864$ and $0 < 16$.

Problem 2

1. Use $25 \times 50 = 1250$; $1375 - 1250 = 125$ remains.
2. $125 = 25 \times 5 + 0$, so quotient $= 50 + 5 = 55$ with remainder 0.
3. Check $25 \times 55 + 0 = 1375$ and $0 < 25$.

Problem 3

1. Use $18 \times 50 = 900$; $1027 - 900 = 127$ remains.
2. $127 = 18 \times 7 + 1$, so quotient $= 50 + 7 = 57$ with remainder 1.
3. Check $18 \times 57 + 1 = 1027$ and $1 < 18$.

Problem 4

1. Use $28 \times 50 = 1400$; $1512 - 1400 = 112$ remains.
2. $112 = 28 \times 4 + 0$, so quotient $= 50 + 4 = 54$ with remainder 0.
3. Check $28 \times 54 + 0 = 1512$ and $0 < 28$.

Problem 5

1. Use $21 \times 30 = 630$; $756 - 630 = 126$ remains.
2. $126 = 21 \times 6 + 0$, so quotient $= 30 + 6 = 36$ with remainder 0.
3. Check $21 \times 36 + 0 = 756$ and $0 < 21$.

Problem 6

1. Use $32 \times 30 = 960$; $985 - 960 = 25$ remains.
2. $25 = 32 \times 0 + 25$, so quotient $= 30 + 0 = 30$ with remainder 25.
3. Check $32 \times 30 + 25 = 985$ and $25 < 32$.

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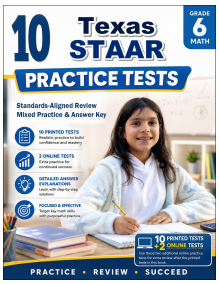

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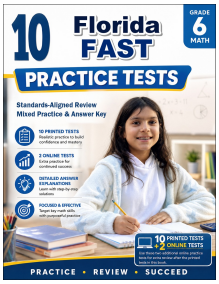

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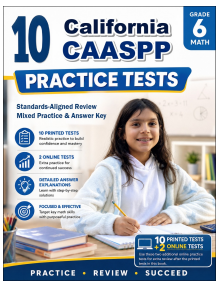

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