Multi-Digit Multiplication

Apply the skill to decisions and designs

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

QUICK REVIEW

Break a factor into place-value parts. $23 \times 14 = 23 \times 10 + 23 \times 4 = 230 + 92 = 322$. For 302×6, include the zero tens: $300 \times 6 + 2 \times 6 = 1{,}812$.

Worked example

Use partial products to find 46×23.

1. $23 = 20 + 3$.
2. $46 \times 20 = 920$ and $46 \times 3 = 138$.
3. $920 + 138 = 1058$; check $1058 \div 23 = 46$.
Answer: 1058.

Practice Problems

Show your thinking.

1. A garden has 28 rows of 35 seeds. Find the seed count.

2. A printer makes 312 labels per batch for 8 batches. Find the total.

3. An event has 64 tables with 27 cards each. How many cards?

4. Three schools each get $2{,}304$ pencils. Find the total.

5. A 26 by 18 seating plan is reported as $26 \times 10 + 26 \times 8 = 286$. Repair the total.

6. A 32-row design uses $1{,}216$ tiles. Find the equal number of tiles per row.

7. Choose the larger stock: 25 packs of 36 or 30 packs of 28. Give the difference.

8. An area model splits 34 as $30 + 4$ for 62×34. Find both partial areas and the total.

	30	4
62	☐	☐

Answer Key

1. 980.
2. 2496.
3. 1728.
4. 6912.
5. 468 seats.
6. 38 tiles.
7. The first stock is larger by 60 items.
8. 2108.

Step-by-Step Solutions

Follow each calculation, then check your own work.

Problem 1

1. $35 = 30 + 5$.
2. $28 \times 30 = 840$ and $28 \times 5 = 140$.
3. $840 + 140 = 980$; check $980 \div 35 = 28$.

Problem 2

1. $312 = 300 + 12$.
2. $300 \times 8 = 2400$ and $12 \times 8 = 96$.
3. $2400 + 96 = 2496$; check $2496 \div 8 = 312$.

Problem 3

1. $27 = 20 + 7$.
2. $64 \times 20 = 1280$ and $64 \times 7 = 448$.
3. $1280 + 448 = 1728$; check $1728 \div 27 = 64$.

Problem 4

1. $2304 = 2000 + 304$.
2. $2000 \times 3 = 6000$ and $304 \times 3 = 912$.
3. $6000 + 912 = 6912$; check $6912 \div 3 = 2304$.

Problem 5

1. $26 \times 10 = 260$.
2. $26 \times 8 = 208$.
3. $260 + 208 = 468$ seats, not 286.

Problem 6

1. $32 \times 30 = 960$.
2. $1{,}216 - 960 = 256 = 32 \times 8$.
3. $30 + 8 = 38$ tiles per row; $32 \times 38 = 1{,}216$.

Problem 7

1. $25 \times 36 = 25 \times (30 + 6) = 750 + 150 = 900$.
2. $30 \times 28 = 840$.
3. $900 - 840 = 60$ items.

Problem 8

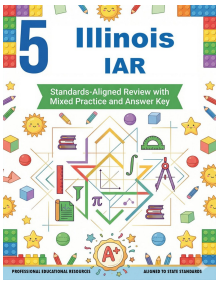
1. $34 = 30 + 4$.
2. $62 \times 30 = 1860$ and $62 \times 4 = 248$.
3. $1860 + 248 = 2108$; check $2108 \div 34 = 62$.

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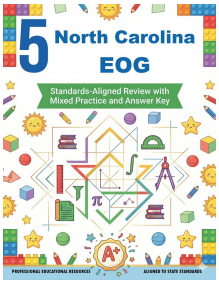
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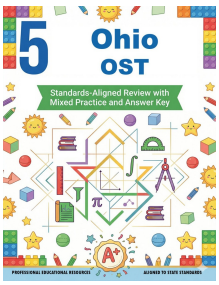
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