Multiplying Multi-Digit Whole Numbers

Multiplying Multi-Digit Whole Numbers: Find, Fix, and Work Backward

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

QUICK REVIEW

Multiply each place, then add partial products. For 132×24, $132 \times 20 = 2640$ and $132 \times 4 = 528$, so $2640 + 528 = 3168$. The 2 in 24 means 20, not 2.

Worked example

Multiply 130×23 using partial products.

1. Break the second factor into $20 + 3$.
2. Partial products: $130 \times 20 = 2600$ and $130 \times 3 = 390$.
3. Add: $2600 + 390 = 2990$.
Answer: 2990.

Practice Problems

Show your thinking.

1. A student finds 246×32 by adding $738 + 492$. Identify the place-value error and correct it.

2. Complete the missing factor: $\square \times 24 = 4128$. Show a multiplication check.

3. The tens partial product for 315×46 is 12600. Find the missing ones partial product and the total.

4. A club orders 37 kits with 209 pieces each. An invoice lists 7833 pieces. How many pieces too many does it list?

5. Is 184×53 greater than 9702? Compute the difference.

6. A multiplication has first factor 321, total product 5778, and tens partial product 3210. Find the ones digit of the second factor and reconstruct that factor.

7. Compare 152×64 with 153×64. Use partial products to find both products and explain the exact increase.

8. The tens partial product for 407×23 is 8140. Find the missing ones partial product and the total.

Answer Key

1. 7872.
2. 172.
3. Ones partial product 1890; total 14490.
4. 100 pieces too many.
5. Yes; by 50.
6. Ones digit 8; second factor 18.
7. 9728 and 9792; increase 64.
8. Ones partial product 1221; total 9361.

Step-by-Step Solutions

Follow each calculation, then check your own work.

Problem 1

1. Break the second factor into $30 + 2$.
2. Partial products: $246 \times 30 = 7380$ and $246 \times 2 = 492$.
3. Add: $7380 + 492 = 7872$.

Problem 2

1. Undo the known factor: $4128 \div 24 = 172$; now verify that candidate with partial products.
2. Break the second factor into $20 + 4$.
3. Partial products: $172 \times 20 = 3440$ and $172 \times 4 = 688$.
4. Add: $3440 + 688 = 4128$.

Problem 3

1. Break the second factor into $40 + 6$.
2. Partial products: $315 \times 40 = 12600$ and $315 \times 6 = 1890$.
3. Add: $12600 + 1890 = 14490$.

Problem 4

1. Break the second factor into $30 + 7$.
2. Partial products: $209 \times 30 = 6270$ and $209 \times 7 = 1463$.
3. Add: $6270 + 1463 = 7733$.
4. $7833 - 7733 = 100$ pieces.

Problem 5

1. Break the second factor into $50 + 3$.
2. Partial products: $184 \times 50 = 9200$ and $184 \times 3 = 552$.
3. Add: $9200 + 552 = 9752$.
4. $9752 - (9702) = 50$.

Problem 6

1. Break the second factor into $10 + 8$.
2. Partial products: $321 \times 10 = 3210$ and $321 \times 8 = 2568$.
3. Add: $3210 + 2568 = 5778$.
4. The ones partial product is $5778 - 3210 = 2568$.
5. $2568 \div 321 = 8$; combine $10 + 8 = 18$.

Problem 7

1. Break the second factor into $60 + 4$.
2. Partial products: $152 \times 60 = 9120$ and $152 \times 4 = 608$.
3. Add: $9120 + 608 = 9728$.
4. One more group of 64 gives $9728 + 64 = 9792$; difference is 64.

Problem 8

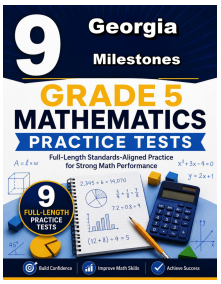
1. Break the second factor into $20 + 3$.
2. Partial products: $407 \times 20 = 8140$ and $407 \times 3 = 1221$.
3. Add: $8140 + 1221 = 9361$.

TESTINAR

Keep Building Grade 5 Math Skills

Choose the practice book matched to your state assessment and turn worksheet practice into a complete test-prep plan.

All Grade 5 books



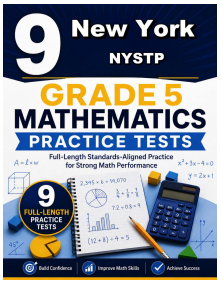
GEORGIA MILESTONES

9 Full-Length Math Practice Tests

Build Grade 5 accuracy, confidence, and test stamina with 9 printable practice tests.

Printable eBook • Instant PDF access

View eBook



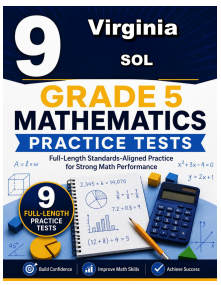
NEW YORK NYSTP

9 Full-Length Math Practice Tests

Build Grade 5 accuracy, confidence, and test stamina with 9 printable practice tests.

Printable eBook • Instant PDF access

View eBook



VIRGINIA SOL

9 Full-Length Math Practice Tests

Build Grade 5 accuracy, confidence, and test stamina with 9 printable practice tests.

Printable eBook • Instant PDF access

View eBook

Need a different state?
Testinar has Grade 5 math practice books for state assessments across the country.

TESTINAR.COM/GRADES/5