Summary 3.03

When multiplying multi-digit numbers, whether you decompose factors by place value or another way, the sum of all the partial products will be the same. The more you decompose each factor, the more partial products you will have.

284 × 37

	200	80	4
30	6,000	2,400	120
7	1,400	560	28

6,000
1,400
2,400
560
120
\+ 28
10,508

284 × 37

(200 + 80 + 4) × (30 + 7)
200 × 30 = 6,000
200 × 7 = 1,400
80 × 30 = 2,400
80 × 7 = 560
4 × 30 = 120
4 × 7 = 28
6,000 + 1,400 + 2,400 = 9,800
560 + 120 + 28 = 708
9,800 + 708 = 10,508

Practice 3.03

1 Complete the statement so that it correctly shows the best estimate for the equation.

937 × 25

Select **ONE** correct answer in each box to complete the sentence.

The factor 937 best rounds to [A 1,000 / B 935] and the factor 25 best rounds to [A 25 / B 50] making the estimate [A 46,750 / B 25,000].

Name _____ Date _____

For Problems 2 and 3, write an equation to represent an estimate of the product. Then determine the product. Sample equations and work shown.

Show your thinking.

2 54,206 × 7

estimate equation: 50,000 × 7 = 350,000

50,000 × 7 = 350,000
4,000 × 7 = 28,000
200 × 7 = 1,400
6 × 7 = 42

350,000
28,000
1,400
+ 42
379,442

answer: 379,442

3 861 × 52

estimate equation: 900 × 50 = 45,000

800 × 50 = 40,000
800 × 2 = 1,600
60 × 50 = 3,000
60 × 2 = 120
1 × 52 = 52

40,000 + 1,600 + 3,000 + 120 + 52 = 44,772

answer: 44,772

Name _____ Date _____

4 Which expression has the greatest product? Explain your thinking.

Sample explanation shown.

(A) 1,622 × 34 (B) 1,525 × 32

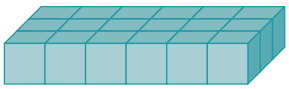
(C) 1,579 × 30 (D) 1,614 × 33

1,622 × 34 has the greatest product because both factors are greater than the factors in the other expressions.

Spiral Review

5 A box is filled with cubes. Each cube has a volume of 1 cubic centimeter. The base layer is shown. It takes 4 layers to fill the entire box. What is the volume of the box?

72 cubic centimeters



For Problems 6–9, determine the value of the expression.

6 60 × 60 3,600

7 20 × 80 1,600

8 8,190 ÷ 9 910

9 5,607 ÷ 7 801

For Problems 10 and 11, identify whether the number is a prime number or a composite number.

10 13 prime

11 25 composite