حل تدريبات الدروس الأول والثاني والثالث من الوحدة الخامسة منهج ريفيل

Unit 5 – L 1

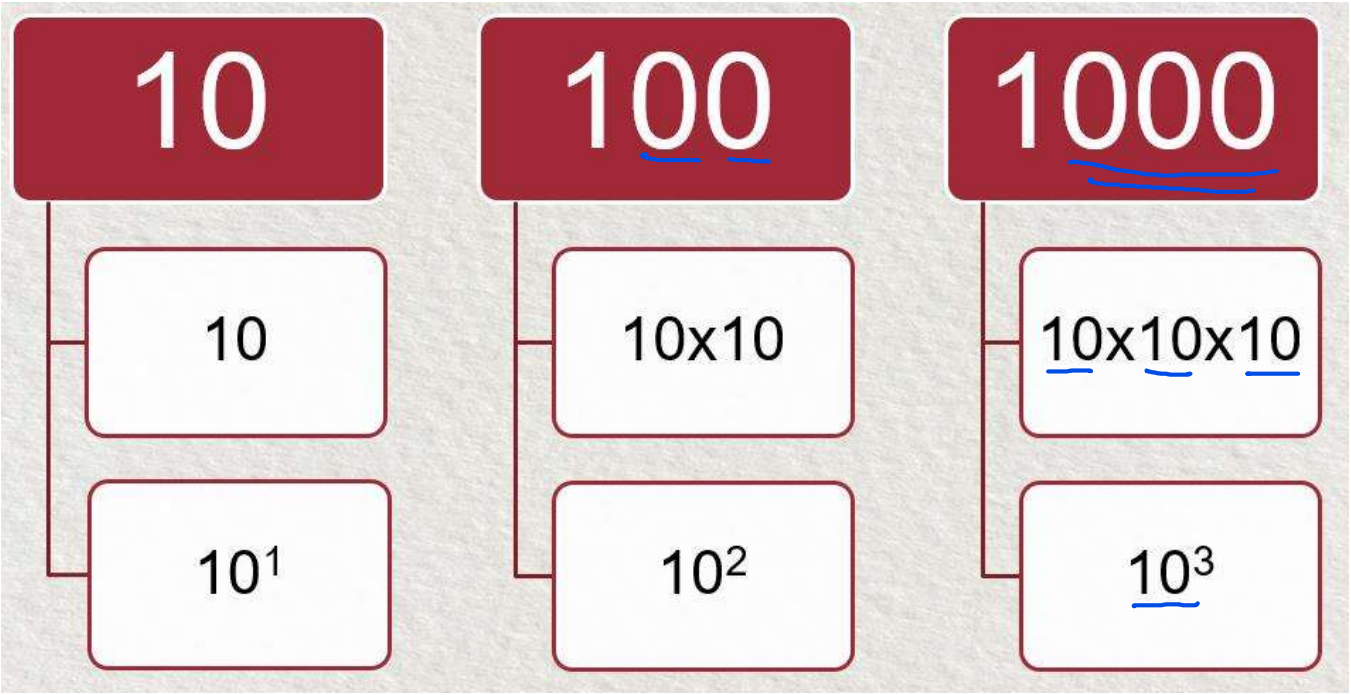
Lesson 5-1
Understand Powers and Exponents

10000

10^4

10x10x10x10

Book Page: 135



10 x 10 x 10 x 10

Multiplication Expression

10 Power 4

Exponent

$10^4 = 10000$

Base

Product

حاصل الضرب #

ناتج الضرب

Work Together

Write 10^8 as a multiplication expression. Then, find the product.

$10^8 = 10 \times 10 \times 10 \times 10 \times 10 \times 10 \times 10 \times 10$

$= 100,000,000$

Write the exponential form as a multiplication expression.

1. 10^4 10 x 10 x 10 x 10
2. 10^2 10 x 10
3. 10^3 10 x 10 x 10
4. 10^6 10 x 10 x 10 x 10 x 10 x 10

Write the exponential form.

5. 10 × 10 × 10 = 10^3
6. 10 × 10 × 10 × 10 × 10 = 10^5
7. 10 × 10 × 10 × 10 = 10^4
8. 10 × 10 = 10^2

Write the exponential form of each power of 10.

9. 10 = 10^1
10. 1,000 = 10^3
11. 100 = 10^2
12. 10,000 = 10^4

13. Rachel finds the value of 10^5 as shown. Do you agree with her solution? Tell why.

$10^5 = 10 \times 5 = 50$

100,000 The correct

14. **STEM Connection** Grace reviewed 10^6 lines of a computer program. How many lines did she review? Write the product.

$10^6 = 1000\,000$

Lesson **5-1**

Exit Ticket

1. Which exponential form matches each power of 10? Not all exponential forms will be used.

	10^1
10,000	10^2
1,000	10^3
10	10^4
100,000	10^5
	10^6

2. Which is equivalent to 104? Choose all that apply.

A. 10×4 **B.** $10 \times 10 \times 10 \times 10$

C. $10 \times 10 \times 10 \times 10 \times 10$ **D.** 1,000

E. 10,000 **F.** 100,000

3. Which is equivalent to 1,000,000? Choose all that apply.

A. 10×6 **B.** $10 \times 10 \times 10 \times 10 \times 10$

C. $10 \times 10 \times 10 \times 10 \times 10 \times 10$ **D.** $10 \times 10 \times 10 \times 10 \times 10 \times 10 \times 10$

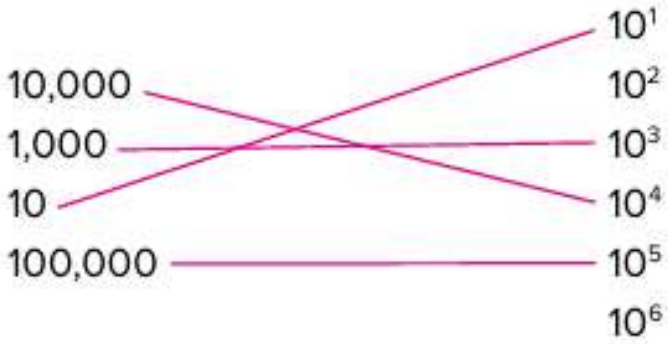
E. 10^6 **F.** 10^7

Lesson **5-1**

Exit Ticket

Name _____

1. Which exponential form matches each power of 10? Not exponential forms will be used.



2. Which is equivalent to 10^4? Choose all that apply.

A. 10×4

B. $10 \times 10 \times 10 \times 10$

C. $10 \times 10 \times 10 \times 10 \times 10$

D. 1,000

E. 10,000

F. 100,000

3. Which is equivalent to 1,000,000? Choose all that apply.

A. 10×6

B. $10 \times 10 \times 10 \times 10 \times 10$

C. $10 \times 10 \times 10 \times 10 \times 10 \times 10$

D. $10 \times 10 \times 10 \times 10 \times 10 \times 10 \times 10$

E. 10^6

F. 10^7

Unit 2 – L 2

Lesson 5-2

Patterns When Multiplying a Whole Number by Powers of 10

34×10^4

whole

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$15 \times 10{,}000$

$15 \times 10 \times 10 \times 10 \times 10$

15×10^4

150,000

Learn

The distances from these planets to the Sun are shown as multiplication expressions.

How can you determine the value of these expressions?

Mercury
about 36×10^6 mi

Neptune
about 3×10^9 mi

First, determine the distance from Mercury to the Sun. Look for pattterns when multiplying by a power of 10.

$36 \times 10^6 = 36 \times 10 \times 10 \times 10 \times 10 \times 10 \times 10$

$= 36 \times 1{,}000{,}000$

$= 36{,}000{,}000$

The exponent is the same as the number of zeros in the product.

The distance from Mercury to the Sun is about **36,000,000 miles.**

You can use patterns to determine the distance from Neptune to the Sun.

$3 \times 10^9 = 3 \times 1{,}000{,}000{,}000$

$= 3{,}000{,}000{,}000$

The distance from Neptune to the Sun is about 3,000,000,000 miles.

Math is... Structure

Why does the place of the digits in a number shift each time you multiply by 10?

When multiplying by powers of 10, there is a pattern in the number of zeros in the product in relationship to the exponent.

Work Together

Find the value of each expression. Explain how you used patterns to help you.

32×10^2	32×10^3	32×10^4
32×100	32×1000	32×10000
3200	32000	320000

What is the product? Use patterns to solve.

1. $12 \times 10 =$ 120
   $12 \times 100 =$ 1200
   $12 \times 1{,}000 =$ 12000

2. $24 \times 1{,}000 =$ 24000
   $24 \times 10{,}000 =$ 240000
   $24 \times 100{,}000 =$ 2400000

3. $33 \times 10^2 =$ 3300
   $33 \times 10^3 =$ 33000
   $33 \times 10^4 =$ 330000

4. $57 \times 10^4 =$ 570 000
   $57 \times 10^5 =$ 5700000
   $57 \times 10^6 =$ 570 000 000

What is the product?

5. 23×10^3 23000

6. 581×10^2 5

7. 60×10^4 600,000

8. 103×10^2 10300

What is the unknown factor?

9. $571 \times$ 10 $= 5{,}710$

10. $43 \times$ 100,000 $= 4{,}300{,}000$

11. $6 \times$ 1000 $= 6{,}000$

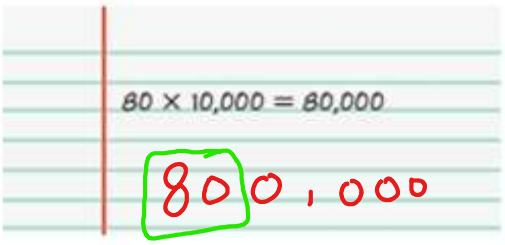
12. $28 \times$ 10000 $= 280{,}000$

13. How can you describe the relationship between the equations shown?

$6 \times 10^5 = 600{,}000$
$6 \times 10^7 = 60{,}000{,}000$
$6 \times 10^9 = 6{,}000{,}000{,}000$

when Power increase by 2 Numbe of Zeroes increase by 2 .

14. **Error Analysis** Carol says the equation that she wrote is correct. How do you respond to her?



The correct 800,000

15. Which equations are *true*? Circle all that apply.

A. $6 \times 100 = 6 \times 10 \times 10 \times 10$

B. $10{,}000 \times 4 = 10 \times 10 \times 10 \times 10 \times 4$

C. $15 \times 10^3 = 1{,}500$

D. $70 \times 10 \times 10 = 7{,}000$

16. **Extend Your Thinking** Find the unknown factor that is a whole number. Explain your thinking.

$$? \times 10^5 = 56{,}300{,}000$$

563

Q.3. Which is equivalent to 75×10^4?

(a) 750 (b) 75,000

(c) 750,000 (d) 7,500,000

RVL 5-05-02 Digital Exit Ticket

1) Enter the answers.
What are the products. Use patterns to find the values.

$36 \times 10 =$ _____

$36 \times 100 =$ _____

$36 \times 1{,}000 =$ _____

2) Choose the answer.
Which is equivalent to 24×10^4?

- ○ 240
- ○ 24,000
- ○ 240,000
- ○ 2,400,000

3) Choose the answer.
Which is equivalent to 98×10?

- ○ 98
- ○ 980
- ○ 9,800
- ○ 980,000

4) Enter the answer.
Which power of 10 completes the equation?

$43 \times$ _____ $= 4{,}300$

5) Choose the answer.
Which exponential form completes the equation?

$27 \times$ ___ $= 2{,}700{,}000$

- ○ 10^8
- ○ 10^7
- ○ 10^6
- ○ 10^5

Lesson **5-2**

Exit Ticket

Name _____

1. What is the products of the equations? Use patterns to find the values.

$36 \times 10 =$ **360**

$36 \times 100 =$ **3,600**

$36 \times 1{,}000 =$ **36,000**

2. Which is equivalent to 24×10^4?

A. 240

B. 24,000

C. 240,000

D. 2,400,000

3. Which is equivalent to 98×10?

A. 98

B. 980

C. 9,800

D. 980,000

4. Which power of 10 completes the equation?

$43 \times$ **100** $= 4{,}300$

5. Which exponential form completes the equation?

$27 \times$ **10^5** $= 2{,}700{,}000$

تقدير

Unit 5 – L 3

Lesson 5-3
Estimate Products of Multi-Digit Factors

Book Page: 143

by Rounding

Estimate the product.

1. 643 x 18

600 x 20 = 12000

2. 325 x 62

300 x 60 = 18000

3. 438 x 27

400 x 30 = 12000

4. 572 x 49

600 x 50 = 30,000

5. On a school trip, 54 students went to a museum. Each ticket cost $23. About how much did all students spend on tickets?

↳ estimate

54 x 23

50 x 20 = 1000 $

6. The town library has 478 shelves. Each shelf holds 38 books. About how many books does the library have?

478 x 38

500 x 40 = 20,000 books

7. A vendor at a fair is selling her paintings for $23 each. Over the course of the fair, 339 people purchase her paintings. About how much did the vendor earn over the course of the fair?

339 x 23

300 x 20 = 6000 $

8. The fifth graders sold 405 baked goods at the bake sale. About how much did the fifth graders earn?

405 x 12

400 x 10 = 4000 $

about 4000

by compitable ← 650

10. Which equation represents a reasonable estimate for 658 × 19? Explain.

700 x 20

الأقرب ←

A. 700 × 10 = 7,000

B. 650 × 20 = 13,000 ✓

C. 600 × 10 = 6,000

11. If you estimate the product of 246 × 38, will the estimate be greater using rounded numbers or compatible numbers? Why?

Compatible

250 x 40

= 10000 ✓

Round

200 x 40 = 8000

Lesson **5-3**

Exit Ticket

1. Which is the most reasonable **estimate** for 58 × 372?

   A. 50 × 300 **B.** 60 × 400

   C. 500 × 400 **D.** 600 × 300

2. Which is the most reasonable **estimate** for 37 × 86?

   A. 30 × 80 **B.** 30 × 90

   C. 40 × 80 **D.** 40 × 90

3. **Estimate** the product.142 × 17

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4. A movie ticket costs $12. For one day, a theater sold 478 tickets. **About how much** money did the theater receive that day?

   A. $500 **B.** $5,000 **C.** $50,000

5. A rectangular field measures 768 feet long and 88 feet wide. About **how much is the area** of the field?

Lesson **5-3**

Exit Ticket

Name _____

1. Which is the most reasonable estimate for 58 × 372?

   A. 50 × 300 **B.** 60 × 400

   C. 500 × 400 **D.** 600 × 300

2. Which is the most reasonable estimate for 37 × 86?

   A. 30 × 80 **B.** 30 × 90

   C. 40 × 80 **D.** 40 × 90

3. What is the estimate product of the expression?

   142 × 17

   Sample answer: 100 × 20 = 2,000

4. A movie ticket costs $12. During one day, a theater sold 478 tickets. About how much money did the theater receive that day?

   A. $500

   B. $5,000

   C. $50,000

   D. $500,000

5. A rectangular field measures 768 feet long and 88 feet wide. About how much is the area of the field?

   Sample answer: 800 × 90 = 72,000 square feet