

# Place Value & Powers of Ten Study Guide

## Vocabulary

Term	Definition	Example
Digit		
Place Value		
Base Number		
Exponent		
Power of Ten		

Determine the value of the underlined digit.

427.853 \_\_\_\_\_

2. 62,938.501 \_\_\_\_\_

234,608.2 \_\_\_\_\_

4. 387,942.56 \_\_\_\_\_

549,023.678 \_\_\_\_\_

6. 84,521.376 \_\_\_\_\_

Complete each statement to compare the value of the given digit in each number.

The value of the 3 in 624.539 is \_\_\_\_\_ the value of the 3 in 8,640.375.

The value of the 8 in 7,852.94 is \_\_\_\_\_ the value of the 8 in 14,398.06.

The value of the 5 in 357,024.9 is \_\_\_\_\_ the value of the 5 in 5,620.487

## Multiple Choice

What is the value of the 8 in 5,849.316?

- A. 8                      B. 800                      C. 8,000                      D. 800,000

Which number has a digit 9 with a value  $\frac{1}{10}$  as much as the 9 in 5,492.036?

- A. 593.206                      B. 82,930.4                      C. 603,549.8                      D. 36,208.97

Which number has a digit 2 with a value 100 times as much as the 2 in 7,241.3?

- A. 429,306.75                      B. 92,365.17                      C. 73,528.64                      D. 54,302.9

The Empire State building in New York City is the 5<sup>th</sup> tallest building in the United States. It has a height of 443.2 meters tall.

What is the value of the 2 in this number? \_\_\_\_\_

Write a statement to compare the two values of the digit 4 in this number.

---

The tallest building in New York City is One World Trade Center. It has a height of 541.3 meters. Circle the statement below that best compares to the two values of the digit 3.

- The 3 in 443.2 meters is  $\frac{1}{10}$  the value of the 3 in 541.3 meters.
- The 3 in 443.2 meters is 10 times the value of the 3 in 541.3 meters.

More Multiple Choice

Which number has a digit 8 with a value  $\frac{1}{10}$  as much as the 8 in 48,921.35?

- A. 7,842.03      B. 82,305.61      C. 3,582.46      D. 806,324.5

Which statement about the two values of the digit 5 is correct? 825.537

- A. The underlined 5 is 10 times the value of the other 5.  
B. The underlined 5 is 100 times the value of the other 5.  
C. The underlined 5 is  $\frac{1}{10}$  the value of the other 5.  
D. The underlined 5 is  $\frac{1}{100}$  times the value of the other 5.

Which number has a digit 3 with a value 100 times as much as the 3 in 4,816.3?

- A. 934.506      B. 8,523.H      C. 17,259.643      D. 54,302.9

Which statement about the two values of the digit 9 is correct? 419,593.2

- A. The underlined 9 is 10 times the value of the other 9.  
B. The underlined 9 is 100 times the value of the other 9.  
C. The underlined 9 is  $\frac{1}{10}$  the value of the other 9.  
D. The underlined 9 is  $\frac{1}{100}$  times the value of the other 9.

What is  $\frac{1}{10}$  the value of 0.07?

- A. 70      B. 7      C. 0.7      D. 0.007

What is 10 times the value of 2,000?

- A. 20      B. 200      C. 20,000      D. 200,000

Write each number in exponent form.

$10 \quad \underline{\hspace{2cm}}$

$100 \quad \underline{\hspace{2cm}}$

$1,000 \quad \underline{\hspace{2cm}}$

$10,000 \quad \underline{\hspace{2cm}}$

$1,000,000 \quad \underline{\hspace{2cm}}$

$1,000 \quad \underline{\hspace{2cm}}$

$100,000 \quad \underline{\hspace{2cm}}$

$1 \quad \underline{\hspace{2cm}}$

Solve.

$2.56 \times 10^4 = \underline{\hspace{2cm}}$

$5.4 \div 10^1 = \underline{\hspace{2cm}}$

$38.74 \div 10^2 = \underline{\hspace{2cm}}$

$491 \times 10^3 = \underline{\hspace{2cm}}$

$626 \times 10^3 = \underline{\hspace{2cm}}$

$7.9 \div 100 = \underline{\hspace{2cm}}$

$89 \times 10^3 = \underline{\hspace{2cm}}$

$256.4 \div 10^2 = \underline{\hspace{2cm}}$

$0.054 \div 100 = \underline{\hspace{2cm}}$

$6.3 \times 10^5 = \underline{\hspace{2cm}}$

Fill in the blank with the missing power of ten.

$2156 \times \underline{\hspace{1cm}} = 215.6$

$4.89 \div \underline{\hspace{1cm}} = 0.00489$

$3.7 \times \underline{\hspace{1cm}} = 37,000$

$23 \div \underline{\hspace{1cm}} = 0.23$

Multiple Choice

What number when divided by  $10^4$  equals 0.2?

- A. 2000      B. 200      C. 20      D. 2

Which expression is equal to 58,000?

- A.  $58 \times 10^2$       B.  $58 \times 10^3$       C.  $58 \times 10^4$       D.  $58 \times 10^5$

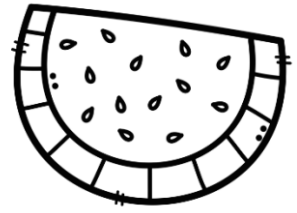
Lucy sold 100 glasses of lemonade at her lemonade stand. If each glass contained 10.6 ounces of lemonade, how many ounces of lemonade did Lucy sell in all?

- A. 0.106 ounces      B. 1,060 ounces  
C. 106 ounces      D. 10,060 ounces



Read and solve the problem below.

Whitney sliced a watermelon into 100 equal pieces. Each piece weighed 23.8 grams. Whitney said the total weight of all 100 pieces equaled 0.238 grams.



Whitney's Work:

$$23.8 \times 100$$

$$23.8 = 0.238$$



Find and correct Whitney's mistake. \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Notes Zone

