Understanding Place Value

Grade 5 Math • Section 1.1

Name: _____	Date: _____	Score: _____ / 14

Quick Review and Helpful Hints

Place-value pattern: In a multi-digit number, a digit in one place represents $10\times$ what it represents in the place to its right and $\frac{1}{10}$ of what it represents in the place to its left.

Place-value chart (decimal places): ones $\rightarrow$ tenths $\rightarrow$ hundredths $\rightarrow$ thousandths.

The value of a digit depends on its **position**, not just the digit itself.

Example: In the number $55{,}500$, what is the relationship between the values of the digit 5 in the thousands place and the 5 in the hundreds place?

The 5 in the thousands place has a value of $5{,}000$. The 5 in the hundreds place has a value of 500. Since $5{,}000 \div 500 = 10$, the 5 in the thousands place is worth 10 times as much as the 5 in the hundreds place. Equivalently, the 5 in the hundreds place is $\frac{1}{10}$ of the 5 in the thousands place.

Answer: 10 times as much

Practice Problems

Determine the value of the underlined digit or compare digit values.

1. In $3{,}482$, the value of the digit 4 is _____. _____
2. In 7.639, the value of the digit 3 is _____. _____
3. In $22{,}200$, how many times greater is the 2 in the thousands place than the 2 in the hundreds place? _____
4. In 0.555, the 5 in the tenths place is how many times the value of the 5 in the hundredths place? _____
5. In 44.4, the 4 in the tens place is _____ times the value of the 4 in the tenths place. _____
6. In $8{,}880$, the 8 in the hundreds place is $\frac{1}{?}$ of the 8 in the thousands place. _____
7. Write the value of the 6 in $36{,}195$: _____. _____
8. Write the value of the 9 in 4.092: _____. _____
9. In 1.117, the 1 in the tenths place is _____ times the 1 in the hundredths place. _____
10. In $63{,}600$, the 6 in the ten-thousands place is how many times the 6 in the hundreds place? _____
11. 0.07 is $\frac{1}{10}$ of _____. _____
12. 500 is 10 times _____. _____

Word Problems

13. Maria says the 3 in $3{,}300$ has the same value in both places. Is she correct? Explain your reasoning using the place-value rule.

_____

14. A school collected $\$4{,}440$ for a fundraiser. Explain how the value of each digit 4 in this number relates to the others using the $\times 10$ rule.

_____

Answer Keys

1. 400
2. 0.03
3. 10 times
4. 10 times
5. 100
6. $\frac{1}{10}$
7. $6{,}000$
8. 0.09
9. 10
10. 100
11. 0.7
12. 50
13. No
14. $4{,}000,\ 400,\ 40$

Step-by-Step Explanations

1. Start with the main idea. For place value, the 4 is in the hundreds place, so its value is 400. Place value is about position: the same digit can have a very different value in a new place.

2. Keep the work tidy. For place value, the 3 is in the hundredths place, so its value is 0.03. Saying the place name out loud is a simple way to catch a misplaced zero.

3. Look at what the numbers mean. For place value, the thousands-place 2 is $2{,}000$ and the hundreds-place 2 is 200; $2{,}000 \div 200 = 10$. When two matching digits are side by side in different places, compare their values, not just the digits.

4. Use the setup first. For place value, a tenth is 10 times a hundredth. Place value is about position: the same digit can have a very different value in a new place.

5. Check the size of the answer. For place value, the tens-place 4 is worth 40 and the tenths-place 4 is worth 0.4; $40 \div 0.4 = 100$. Saying the place name out loud is a simple way to catch a misplaced zero.

6. Match the operation to the words. For place value, the hundreds-place 8 is one tenth of the thousands-place 8. When two matching digits are side by side in different places, compare their values, not just the digits.

7. Write the important values first. For place value, the 6 is in the thousands place. Place value is about position: the same digit can have a very different value in a new place.

8. Follow the pattern carefully. For place value, the 9 is in the hundredths place. Saying the place name out loud is a simple way to catch a misplaced zero.

9. Start with the main idea. For place value, a tenth is 10 times as large as a hundredth. When two matching digits are side by side in different places, compare their values, not just the digits.

10. Keep the work tidy. For place value, $60{,}000 \div 600 = 100$, so the ten-thousands 6 is 100 times as much. Place value is about position: the same digit can have a very different value in a new place.

11. Look at what the numbers mean. For place value, if 0.07 is one tenth of a number, multiply by 10: $0.07 \times 10 = 0.7$. Saying the place name out loud is a simple way to catch a misplaced zero.

12. Use the setup first. For place value, if 500 is 10 times a number, divide by 10: $500 \div 10 = 50$. When two matching digits are side by side in different places, compare their values, not just the digits.

13. Check the size of the answer. For place value, the two 3s have values $3{,}000$ and 300, so they are not the same. Place value is about position: the same digit can have a very different value in a new place.

14. Match the operation to the words. For place value, each 4 is 10 times the value of the 4 to its right. Saying the place name out loud is a simple way to catch a misplaced zero.

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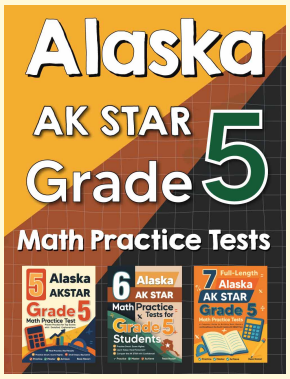

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