

Place Value Patterns

4NBT1

7
70
700
7,000
70,000
700,000

Take a look at the numbers listed.

What do you notice?

What do you wonder?



What is the value of each digit in this number?

777,777



| | Hundred Thousands x100,000 | Ten Thousands x10,000 | Thousands x1,000 | Hundreds x100 | Tens x10 | Ones x1 |
|---------------------------------|----------------------------------|-----------------------------|---------------------|------------------|-------------|------------|
| The value of each digit → | 7 x 100,000 | 7 x 10,000 | 7 x 1,000 | 7 x 100 | 7 x 10 | 7 x 1 |
| → | 700,000 | 70,000 | 7,000 | 700 | 70 | 7 |

| | | | | | | |
|-----------------|---|---|----|---|---|---|
| The number → | 7 | 7 | 7, | 7 | 7 | 7 |
|-----------------|---|---|----|---|---|---|

- What do you notice about the value of each digit as you look from **right to left**?



| | Hundred Thousands x100,000 | Ten Thousands x10,000 | Thousands x1,000 | Hundreds x100 | Tens x10 | Ones x1 |
|---------------------------------|----------------------------------|-----------------------------|---------------------|------------------|-------------|------------|
| The value of each digit → | 7 x 100,000 | 7 x 10,000 | 7 x 1,000 | 7 x 100 | 7 x 10 | 7 x 1 |
| → | 700,000 | 70,000 | 7,000 | 700 | 70 | 7 |
| The number → | 7 | 7 | 7, | 7 | 7 | 7 |

Diagram illustrating the relationship between the value of each digit and the number itself. The chart shows the value of each digit (7) multiplied by its place value (100,000, 10,000, 1,000, 100, 10, 1) to produce the corresponding number (700,000, 70,000, 7,000, 700, 70, 7). Arrows labeled 'x10' indicate the relationship between adjacent columns, showing that the value of each digit is 10 times the value of the digit in the next column to the right.

- What are the connections between each row of the chart above?
 - How does one help you to understand another?
- What are the connections between each column of the chart above?
 - How does one help you to understand another?



| | Hundred Thousands x100,000 | Ten Thousands x10,000 | Thousands x1,000 | Hundreds x100 | Tens x10 | Ones x1 |
|---------------------------------|----------------------------------|-----------------------------|---------------------|------------------|-------------|------------|
| The value of each digit → | 7 x 100,000 | 7 x 10,000 | 7 x 1,000 | 7 x 100 | 7 x 10 | 7 x 1 |
| → | 700,000 | 70,000 | 7,000 | 700 | 70 | 7 |
| The number → | | | | | | |

- How many times greater is the 7 in the tens place than the 7 in the ones place?
- How many times greater is the 7 in the hundreds place than the 7 in the ones place?
- How many times greater is the 7 in the thousands place than the 7 in the tens place?



| | Hundred Thousands x100,000 | Ten Thousands x10,000 | Thousands x1,000 | Hundreds x100 | Tens x10 | Ones x1 |
|---------------------------------|----------------------------------|-----------------------------|---------------------|------------------|-------------|------------|
| The value of each digit → | ___ x 100,000 | ___ x 10,000 | ___ x 1,000 | ___ x 100 | ___ x 10 | ___ x 1 |
| → | | | | | | |
| | | | | | | |
| | | | | | | |
| The number → | | | | | | |

Write a number in the bottom row with the digit in the thousands place 100 times bigger than the digit in the _____ place (fill in the place that the thousands place is 100 times bigger than).

Then complete the rest of the chart.



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