

PLACE VALUE NOTES

Definitions

- **Place:** the location of a digit in a numeral. Where does the digit live?
- **Value:** the value of a digit in a numeral. How much is the digit worth?

Example: In the numeral 64,924, the

place of the underlined digit is the hundreds place and the

value of the underlined digit is 900 or nine hundred.

- **Period:** in a number, a group of three digits, separated by commas, starting from the right. The Ones period is sometimes referred to as the Units period.

PLACE VALUES														
Trillions			Billions			Millions			Thousands			Ones		
Hundred trillions	Ten trillions	Trillions	Hundred billions	Ten billions	Billions	Hundred millions	Ten millions	Millions	Hundred thousands	Ten thousands	Thousands	Hundreds	Tens	Ones

Example:

Period			Period			Period		
Millions			Thousands			Ones		
Hun-dreds	Tens	Ones	Hun-dreds	Tens	Ones	Hun-dreds	Tens	Ones
8	5,		6	4	3,	9	0	0

85,643,900 has three periods.

Numerals can be represented 4 ways: standard form, expanded form, word form and expanded notation.

- **standard form:** 5,673,289
- **expanded form:** $5,000,000+600,000+70,000+3,000+200+80+9= 5,673,289$

If a place has a 0, it doesn't need to be represented. In the next example, there are no hundreds and so they do not need to be represented in expanded form. If the non value place is included, it's okay.

Example: $4,017= 4,000+10+7$

- **word form:** five million, six hundred seventy three thousand, two hundred eighty nine= 5,673,289
- **expanded notation:** a method of writing numbers as the sum of ones, tens, hundreds,...

Example: $(5 \times 1,000,000) + (6 \times 100,000) + (7 \times 10,000) + (3 \times 1,000) + (2 \times 100) + (8 \times 10) + (9 \times 1) = 5,673,289$

Place value can help you **compare** and **order** numbers. By understanding the values of the digits in the numeral, you can decide which numeral is **greater than (>)**, **=**, or **less than (<)**.

$45,927 > 7,203$ [the numeral on the left has a higher place (ten thousands) and is therefore **greater than** the numeral on the right since its highest place is just thousands). This number sentence is read forty five thousand, nine hundred twenty seven is **greater than** seven thousand, two hundred three.

Whichever numeral has the highest place is greatest. When 2 numerals have the same digits, it's like alphabetizing. Start at the left and when you get to the place where there is a difference, compare the digits.

Example: $3,123 < 3,127$ [the numeral on the left is **less than** the numeral on the right; all of the digits are the same so you only need to look at the ones place which means 3 is less than 7 so three thousand, one hundred twenty three is **less than** three thousand, one hundred twenty seven.

This same process can help you order a group of numbers too. When ordering a group of numerals, you are placing them in order from either **least to greatest** or **greatest to least** by comparing the values of each numeral.

Example: 174; 821; 294

least to greatest: 174; 294; 821

greatest to least: 821; 294; 174