

# Converting Between Number Forms

Standard Notation → Expanded Notation

1. Begin by identifying the place value of each digit in the number.

Number: 402,810

Place Value Chart														
trillions			billions			millions			thousands			ones		
									4	0	2	8	1	0
hundreds	tens	ones	hundreds	tens	ones	hundreds	tens	ones	hundreds	tens	ones	hundreds	tens	ones

2. Starting from the leftmost digit, write the **digit** followed by its **place value position**.  
A plus sign "+" separates each place value.

Number: 402,810

start end

4 hundred thousands + 0 ten thousands + 2 thousands + 8 hundreds + 1 ten + 0 ones  
**start** **end**

4 hundred thousands + 0 ten thousands + 2 thousands + 8 hundreds + 1 ten + 0 ones  
**start** **end**

\*Note: Place values end with an "s" to indicate they are plural when preceded by all digits except 1.

3. It is common practice to remove all zero-place values to produce a reduced expanded notation.

expanded notation

4 hundred thousands + 0 ten thousands + 2 thousands + 8 hundreds + 1 ten + 0 ones



4 hundred thousands + ~~0 ten thousands~~ + 2 thousands + 8 hundreds + 1 ten + ~~0 ones~~



4 hundred thousands + 2 thousands + 8 hundreds + 1 ten

reduced expanded notation

# Converting Between Number Forms

Standard Notation → Word Name

1. Begin by identifying the periods within the number.

**Number: 758,002,413**

Place Value Chart														
trillions			billions			millions			thousands			ones		
						7	5	8	0	0	2	4	1	3
hundreds	tens	ones	hundreds	tens	ones	hundreds	tens	ones	hundreds	tens	ones	hundreds	tens	ones

2. Starting from the leftmost period, write the **three-digit group name** followed by the **period name** except for the ones period. Commas separate each period.

**Number: 758,002,413**

start                      end


seven hundred fifty-eight million,

two thousand,

four hundred thirteen

seven hundred fifty-eight million, two thousand, four hundred thirteen

**\*Note:** All digits except 0 in hundreds place values are followed by the word **hundred** in word form.

Example:    702,810,000            seven **hundred** two million, eight **hundred** ten thousand

**\*\*Note:** The tens and ones place values give a combined name. Numbers 1 through 20 are **single words**. Numbers 21 through 99 are **hyphenated** except for numbers with zero in the ones place value which are **single words**.

Example:    219   two hundred **nineteen**  
                 272   two hundred **seventy-two**  
                 290   two hundred **ninety**

**\*\*\*Note:** Periods containing **000** are omitted from the word name.

Example:   14,**000**,002        fourteen million, two

# Converting Between Number Forms

## Expanded Notation → Standard Notation

1. Convert the number from **reduced expanded notation** to **expanded notation**.

**reduced expanded notation**

**7 ten millions + 2 millions + 5 hundred thousands + 2 tens**



**7 ten millions + 2 millions + 5 hundred thousands + 0 ten thousands + 0 thousands + 0 hundreds + 2 tens + 0 ones**

**expanded notation**

2. Identify each of the **periods** in the expanded notation.

**7 ten millions + 2 millions + 5 hundred thousands + 0 ten thousands + 0 thousands + 0 hundreds + 2 tens + 0 ones**



**millions**

**thousands**

**ones**

3. Recombine from expanded notation to standard notation starting from the leftmost digit.  
Commas separate each period.

**7 ten millions + 2 millions + 5 hundred thousands + 0 ten thousands + 0 thousands + 0 hundreds + 2 tens + 0 ones**

**start**

**end**



**millions**

**thousands**

**ones**



**72,500,020**

**start**

**end**

# Converting Between Number Forms

Word Name → Standard Notation

1.

Identify each of the **periods** in the word form.

twelve trillion, four hundred eighty

trillions	ones

2.

Identify each of the **digits** in the word form.

twelve trillion, four hundred eighty

trillions	ones
12	480

3.

Recombine from word form to standard notation starting from the leftmost digit. Remember periods containing 000 may be omitted but must be accounted for in standard notation.

Commas separate each period.

twelve trillion, four hundred eighty

trillions	ones
12	480
start	end

12,000,000,000,480

start				end
billions	millions	thousands		

# Converting Between Number Forms

## Expanded Notation → Word Form

1. Convert the number from **reduced expanded notation** to **expanded notation**.

**reduced expanded notation**

**4 hundred millions + 2 millions + 2 hundreds**



**4 hundred millions + 0 ten millions + 2 millions + 0 hundred thousands + 0 ten thousands + 0 thousands + 2 hundreds + 0 tens + 0 ones**

**expanded notation**

2. Identify each of the **periods** in the expanded notation.

**4 hundred millions + 0 ten millions + 2 millions + 0 hundred thousands + 0 ten thousands + 0 thousands + 2 hundreds + 0 tens + 0 ones**



**millions**

**thousands**

**ones**

3. Recombine from expanded notation to word form starting from the leftmost period.

**Omit any periods that contain 000 from the word name.**

**Commas separate each period.**

**4 hundred millions + 0 ten millions + 2 millions + 0 hundred thousands + 0 ten thousands + 0 thousands + 2 hundreds + 0 tens + 0 ones**



**millions**

**thousands**

**ones**

**start**

**end**

**four hundred two million,**

**two hundred**

**four hundred two million, two hundred**

# Converting Between Number Forms

Word Name → Expanded Notation

1.

Identify each of the **periods** in the word form.

nine hundred ninety-nine million, nine hundred ninety

millions	ones

2.

Identify each of the **digits** in the word form.

nine hundred ninety-nine million, nine hundred ninety

millions	ones
999	990

3.

Recombine from word form to expanded notation starting from the leftmost digit. Remember periods containing 000 may be omitted but must be accounted for in expanded notation.

Plus signs “+” separate each period.

nine hundred ninety-nine million, nine hundred ninety

millions	ones
999	990
start	end
thousands	

9 hundred millions + 9 ten millions + 9 millions + 0 hundred thousands + 0 ten thousands + 0 thousands + 9 hundreds + 9 tens + 0 ones

# Converting Between Number Forms

Word Name  $\longrightarrow$  Expanded Notation

4.

Change from expanded notation to reduced expanded notation.

expanded notation

9 hundred millions + 9 ten millions + 9 millions + 0 hundred thousands + 0 ten thousands + 0 thousands + 9 hundreds + 9 tens + 0 ones



9 hundred millions + 9 ten millions + 9 millions + ~~0 hundred thousands + 0 ten thousands + 0 thousands~~ + 9 hundreds + 9 tens + ~~0 ones~~



9 hundred millions + 9 ten millions + 9 millions + 9 hundreds + 9 tens

reduced expanded notation