This handout explains general rules for using numbers in academic writing.

Note: Although the most common applications are covered, reference your style manual for specific formatting instructions.

**Key Concepts**

**Numbers vs. Numerals vs. Digits**

**Numbers** are abstract mathematical concepts of quantity.

**Numerals** are the symbols used to represent numbers. “Five,” “5,” and “V” are numerals that all represent the same number or concept.

**Digits** are specific symbols used to represent numbers. They are used in combination with each other to represent different place values, such as tens, hundreds, thousands, etc. The most common numeral system (base 10), uses the digits “0,” “1,” “2,” “3,” “4,” “5,” “6,” “7,” “8,” and “9.”

**Cardinal vs. Ordinal Numbers**

**Cardinal numbers** represent quantity. They are sometimes called counting numbers.

- **Words:** one, two, three, four, five,...
- **Digits:** 1, 2, 3, 4, 5,...

**Ordinal numbers** represent order within a set.

- **Words:** first, second, third, fourth, fifth,...
- **Digits:** 1st, 2nd, 3rd, 4th, 5th,

**General Rules**

**Choosing Words or Digits within a Sentence**

The choice to use words or digits within a sentence depends heavily on the style guide you are using. For example, APA style requires you to use words for numbers one through nine and digits for numbers 10 and above. Other style guides advise you to use words for any number that you can express with one or two words.
Example: twenty-one

Some style guides recommend using a combination of words and digits to express numbers larger than one million.

Example: The event was viewed by more than 56 million people.

Always check your style guide for specific guidelines.

Beginning a Sentence
Generally, use words to represent numbers at the beginning of a sentence, title, or heading.

Example: Five students attended the workshop.

Some style guides permit starting a sentence with digits when the numeral represents a year or a proper name (e.g., the company name, 3M). Others say to rewrite the sentence in order to avoid starting with a digit.

Forming Plural Numerals
Simply add “s” or “es” to form the plural of a numeral. Do not use an apostrophe.

Incorrect: 1800’s, 6’s and 7’s, one’s and five’s

Correct: 1800s, 6s and 7s, ones and fives

Expressing Cardinal and Ordinal Numbers
Cardinal and ordinal numbers follow the same rules.

Numbers Expressed as Digits

General Use
Generally, use digits to express times, dates, years, ages, addresses, phone numbers, and exact sums of money. Consult your style guide for specific exceptions.

Example: 8:45 p.m.

Example: May 6, 1986

Example: 410-706-7725

Example: $11.38

In Abstracts
Use digits to represent numbers when writing an abstract.

Measurements
In measurements, use digits along with the unit of measure. In APA style, you should abbreviate the unit.

Example: 80 L

Write out the unit of measure when it does not follow a digit.
Example: Samples should be measured in liters.
You should not repeat the unit of measure for multiple values.

Example: 20, 40, 50, and 70 cm

Example: 4–9 kg

Statistics, Percents, Percentiles, and Ratios
Express statistics, percents, percentages, ratios, and other mathematical functions in digits.

Example: 3:1
Use the percent symbol (%) with digits. Use the word “percent” with numbers expressed as words and with fractions.

Example: 38%
Example: Thirty-eight percent

Fractions
Express mixed fractions (i.e., a combination of a whole number and a fraction) in digits unless they begin a sentence.

Example: The union workers expect a 2 ½ percent wage increase.

Decimals
Express decimals with digits.

When representing a statistic that could be greater than one, place a zero before the decimal point.

Example: 0.59 oz
However, if the statistic cannot be greater than one, leave the zero off.

Example: $p = .001$

Decimals vs. Fractions
When determining whether to use fractions or decimals, consider precision and readability. For example, 1/3 is more precise than 0.33. However, approximate decimals are typically easier to compare than fractions.

Numbers Expressed as Words

Common Fractions
Use words to express common fractions, such as a half, third, quarter, etc.

Example: This effect was measured in half of the participants.

Titles and Proper Nouns
Also, use words to express titles or proper nouns.

Example: the Three Stooges

## Numbers Expressed as Digits and Words Combined

When numbers are used to modify other numbers, use a combination of digits and words.

Example: five 4-point scales

## Punctuation with Numerals

### Commas

In numerals with more than three digits, use a comma after every third digit from right to left. Do not include numbers right of the decimal point in your count.

Example: 89,374,241,246,256,644,326

There are a few exceptions to this rule: page numbers, binary numbers, serial numbers, degrees of temperature, etc. Also, certain styles use spaces instead of commas.

### Hyphens

When they are written as words, whole numbers between twenty-one and ninety-nine are hyphenated.

Example: Forty-three people won the Medal of Honor this year.

Hyphenate spelled-out fractions.

Example: Three-fifths of a mile

### En-dashes

Use an en-dash to separate digits in a range.

Example: 1–10

## Roman Numerals

### Background

Roman numerals were used by the Romans in ancient times. The use of these numerals survives in a variety of specialized contexts, such as copyright dates, names of monarchs and popes, page numbers, outlines, and Super Bowl names.

Example: Queen Elizabeth II

Example: page xxiv

Example: Super Bowl XLVII

Included below is a list of the Roman numerals:
Roman Numerals

<table>
<thead>
<tr>
<th>Numeral</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>I</td>
<td>1</td>
</tr>
<tr>
<td>V</td>
<td>5</td>
</tr>
<tr>
<td>X</td>
<td>10</td>
</tr>
<tr>
<td>L</td>
<td>50</td>
</tr>
<tr>
<td>C</td>
<td>100</td>
</tr>
<tr>
<td>D</td>
<td>500</td>
</tr>
<tr>
<td>M</td>
<td>1000</td>
</tr>
</tbody>
</table>

Unlike the place-holding digits of our base 10 system, Roman numerals express numbers by adding values.

**Example:** \( VII = V + I + I = 5 + 1 + 1 = 7 \)

The numerals are written from left to right in decreasing order (i.e., “M” comes first, then “D”).

<table>
<thead>
<tr>
<th>Numeral</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>III</td>
<td>3</td>
</tr>
<tr>
<td>MM</td>
<td>2000</td>
</tr>
<tr>
<td>MDCLXVII</td>
<td>1667</td>
</tr>
</tbody>
</table>

However, in order to express certain numbers, Roman numerals employ a technique called **subtractive notation**. This means that instead of writing four of any particular symbol in row, simply write one of those symbols to the left of the next highest symbol.

**Example:** \( IIII \rightarrow IV \)

This example highlights why the technique is called subtractive notation: the result essentially means “one less than five” (i.e., four).

While this system seems needlessly complex, understanding it is essential for reading Roman numerals.

<table>
<thead>
<tr>
<th>Subtractive Notation in Roman Numerals</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>IV</td>
<td>4</td>
</tr>
<tr>
<td>IX</td>
<td>9</td>
</tr>
<tr>
<td>XL</td>
<td>40</td>
</tr>
<tr>
<td>XC</td>
<td>90</td>
</tr>
<tr>
<td>CD</td>
<td>400</td>
</tr>
<tr>
<td>CM</td>
<td>900</td>
</tr>
</tbody>
</table>
References


