

Name: _____ Period: _____ Date: _____

The Roman Republic

Roman Numerals

The Romans were active in trade and commerce, and from the time of learning to write they needed a way to indicate numbers. The system they developed lasted many centuries, and still sees some specialized use today.

Roman numerals traditionally indicate the order of rulers or ships who share the same name (i.e. Queen Elizabeth II). They are also sometimes still used in the publishing industry for copyright dates, and on cornerstones and gravestones when the owner of a building or the family of the deceased wishes to create an impression of classical dignity. The Roman numbering system also lives on in our languages, which still use Latin word roots to express numerical ideas. A few examples: unilateral, duo, quadricep, septuagenarian, decade, milliliter.

The big differences between Roman and Arabic numerals (the ones we use today) are that Romans didn't have a symbol for zero, and that numeral placement within a number can sometimes indicate subtraction rather than addition.

I The easiest way to note down a number is to make that many marks - little I's. Thus I means 1, II means 2, and III means 3. However, four strokes seemed like too many....

V So the Romans moved on to the symbol for 5 - V. Placing I in front of the V — or placing any smaller number in front of any larger number — indicates subtraction. So IV means 4. After V comes a series of additions - VI means 6, VII means 7, VIII means 8.

X X means 10. But wait — what about 9? Same deal. IX means to subtract I from X, leaving 9. Numbers in the teens, twenties, and thirties follow the same form as the first set, only with X's indicating the number of tens. So XXXI is 31, and XXIV is 24.

L L means 50. Based on what you've learned, I bet you can figure out what 40 is. If you guessed XL, you're right = 10 subtracted from 50. And thus 60, 70, and 80 are LX, LXX, and LXXX.

C C stands for *centum*, the Latin word for 100. A *centurion* led 100 men. We still use this in words like "century" and "cent." The subtraction rule means 90 is written as XC. Like the X's and L's, the C's are tacked on to the beginning of numbers to indicate how many hundreds there are: CCCLXIX is 369.

D D stands for 500. As you can probably guess by this time, CD means 400. So CDXLVIII is 448. (See why we switched systems?)

M M is 1,000. You see a lot of M's because Roman numerals are used a lot to indicate dates. For instance, movie companies usually list a movie's release date during the credits. The year 1974 would be written as MCMLXXIV.

I. You first need to memorize the value of each letter.

II. The value of a letter is doubled or tripled when repeated.

- II = 2
- XXX = 30

Important rules:

- Only the letters I, X, C, and M can be repeated
 - For 10, do NOT write VV
DO write X
- A letter can only be repeated three times
 - For 4, do NOT write IIII
DO write IV

III. If one or more letters are placed after another letter of greater value, add that amount. Only three smaller letters can be added to a larger letter.

- VI = 6 (5 + 1 = 6)
- LXX = 70 (50 + 10 + 10 = 70)
- MCCC = 1300 (1000 + 100 + 100 + 100 = 1300)

IV. If a letter is placed before another letter of greater value, subtract that amount.

- IV = 4 (5 - 1 = 4)
- XC = 90 (100 - 10 = 90)
- CM = 900 (1000 - 100 = 900)

Important rules:

- Only subtract powers of ten (I, X, or C, but not V or L)
 - For 95, do NOT write VC (100 - 5)
DO write XCV (XC + V or 90 + 5)
- Only subtract one number from another.
 - For 13, do NOT write IIXV (15 - 1 - 1)
DO write XIII (X + I + I + I or 10 + 3)
- Do not subtract a number from one that is more than 10 times greater (that is, you can subtract 1 from 10 [IX] but not 1 from 20—there is no such number as IXX.)
 - For 99, do NOT write IC (C - I or 100 - 1)
DO write XCIX (XC + IX or 90 + 9)

V. A bar or line placed on top of a letter or string of letters increases the numeral's value by 1,000 times.

- 4,000 = \overline{MV} (with line over the "V" only) or MMMM (rarely, but not usually)
- 15,000 = \overline{XV} (with line over both "X" and "V")
- 21,000 = \overline{XXM} (with line over "XX")
- 1,000,000 = \overline{M} (with line over "M")

Important rule:

- When M can be used to represent 1,000, it must be.
 - For 4,000, do NOT write \overline{IV} , but DO write \overline{MV}
- For very large numbers (five million and above), there is no standard format, although sometimes a double bar or underline is used to indicate multiplication by 1,000,000. That means an underline X (\underline{X}) is ten million

I	ONE
II	TWO
III	THREE
IV	FOUR
V	FIVE
VI	SIX
VII	SEVEN
VIII	EIGHT
IX	NINE
X	TEN
XI	ELEVEN
XII	TWELVE
XIII	THIRTEEN
XIV	FOURTEEN
XV	FIFTEEN
XVI	SIXTEEN
XVII	SEVENTEEN
XVIII	EIGHTEEN
XIX	NINETEEN
XX	TWENTY
XXX	THIRTY
XL	FORTY
L	FIFTY
LX	SIXTY
LXX	SEVENTY
LXXX	EIGHTY
XC	NINETY
C	1 HUNDRED
D	5 HUNDRED
M	1 THOUSAND
\overline{X}	10 THOU.
\underline{M}	1 MILLION