The notation of Roman numerals has varied through the centuries. Originally, it was common to use IIII to represent *four*, because IV represented the Roman god Jupiter, whose Latin name, IVPITER, begins with IV. The <u>subtractive notation</u> (which uses IV instead of IIII) has become universally used only in modern times. For example, Forme of Cury, a manuscript from 1390, uses IX for *nine*, but IIII for *four*. Another document in the same manuscript, from 1381, uses IV and IX. A third document in the same manuscript uses IIII, IV, and IX. Constructions such as IIIII for *five*, IIX for *eight* or VV for *10* have also been discovered. Subtractive notation arose from regular Latin usage: the number 18 was *duodeviginti* or "two from twenty"; the number 19 was *undeviginti* or "one from twenty". The use of subtractive notation increased the complexity of performing Roman arithmetic, without conveying the benefits of a full positional notation system.

Likewise, on some buildings it is possible to see MDCCCCX, for example, representing 1910 instead of MCMX – notably <u>Admiralty Arch</u> in <u>London</u>. The Leader Building in <u>Cleveland, Ohio</u>, at the corner of Superior Avenue and E.6th Street, is marked MDCCCCXII, representing 1912. Another notable example is on <u>Harvard Medical</u> <u>School</u>'s Gordon Hall, which reads MDCCCCIIII for 1904.

Another likely tale is that the low literacy rate made it difficult for some to do subtraction, where the IIII notation could simply be counted.

## [edit] Calendars and clocks

Clock faces that are labeled using Roman numerals conventionally show IIII for four o'clock and IX for nine o'clock, using the subtractive principle in one case and not the other. There are many suggested explanations for this, several of which may be true:

- The four-character form IIII creates a visual symmetry with the VIII on the other side, which IV would not.
- With IIII, the number of symbols on the clock totals twenty I's, four V's, and four X's, so clock makers need only a single mold with a V, five I's, and an X in order to make the correct number of numerals for their clocks: VIIIIIX. This is cast four times for each clock and the twelve required numerals are separated:
  - V IIII IX
  - o VI II IIX
  - o VII III X
  - VIII I IX

The IIX and one of the IX's are rotated 180° to form XI and XII. The alternative with IV uses seventeen I's, five V's, and four X's, possibly requiring the clock maker to have several different molds.

• IIII was the preferred way for the ancient Romans to write *four*, since they to a large extent avoided subtraction.

- As noted above, it has been suggested that since IV is the first two letters of <u>IVPITER</u> (Jupiter), the main god of the Romans, it was not appropriate to use.
- Only the I symbol would be seen in the first four hours of the clock, the V symbol would only appear in the next four hours, and the X symbol only in the last four hours. This would add to the clock's radial symmetry.
- IV is difficult to read upside down and on an angle, particularly at that location on the clock.
- Louis XIV, king of France, preferred IIII over IV, ordered his clockmakers to produce clocks with IIII and not IV, and thus it has remained.<sup>[1]</sup>