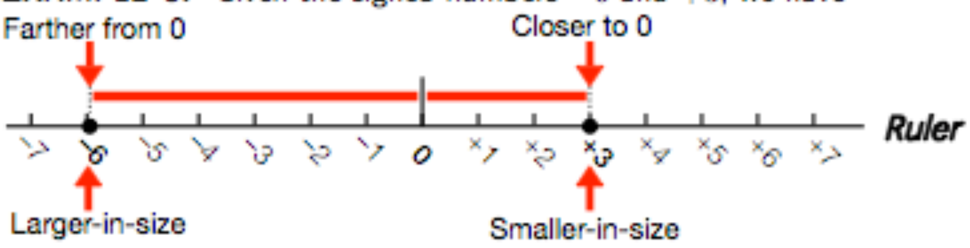
larger-in-size
extent
coded
brackets, square
[ ]
finite number
zero
infinite

closer to 0 and the signed number that is **larger-in-size** is the one *farther* from 0.

EXAMPLE 6. Given the signed numbers -6 and $+3$, we have



and so, since -6 is *farther from* 0, -6 is *larger-in-size* and since $+3$ is *closer to* 0, $+3$ is *smaller-in-size*.

NOTE. The symbols $<$, $\leqq$, $>$, $\geqq$, and $=$ all refer to the comparison of the signed numbers *themselves*.

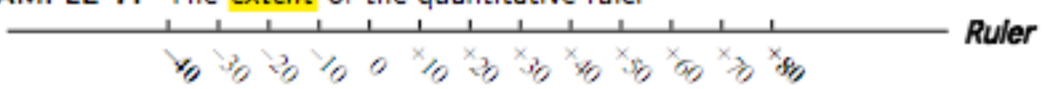
There are no symbols for the comparison of signed numbers according to their *size*[2].

1.4 Finite Numbers, Infinite Numbers, and Infinitesimal Numbers

There are two aspects to *quantitative* rulers.

1. The **extent** of a quantitative ruler is specified by the *smallest* label together with the *largest* label. Extents will be **coded** between **square brackets** [,]

EXAMPLE 7. The *extent* of the quantitative ruler

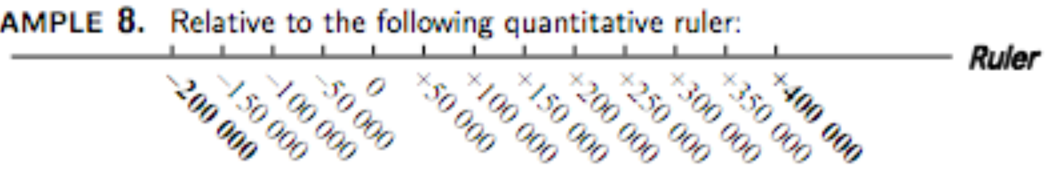


is $[-40, +80]$

From the point of view of the *extent*, there are two kinds of numbers:

- The **finite numbers** which are the numbers that fall *within* the extent of the quantitative ruler. With the excseption of 0 which is not a *finite* number but just ... **zero**. (We will discuss zero in **Section 1.7 Zero**.)
- The **infinite** numbers which are the numbers that fall *beyond* the extent of the quantitative ruler.

EXAMPLE 8. Relative to the following quantitative ruler:



[2]Educologists will surely wonder why not use absolute values. The reason of course is that absolute values is a concept on *top* of signed numbers whereas size is a concept that is *part* of signed numbers.