A History of Modern Mathematical Symbols (In Twenty Slides)

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These symbols first appeared in print in a text by Johannes Widmann, published in 1489. They referred not to addition or subtraction but to surpluses and deficits in business problems.
This symbol was first used for multiplication in an anonymous appendix published in 1618 now believed to have been written by William Oughtred. It is also known as St. Andrew’s Cross.
The dot was introduced as a symbol for multiplication by Leibniz, who wrote in 1698: “I do not like $\times$ as a symbol for multiplication, as it is easily confounded with $x$.\)”
The obelus (÷) was first used as a division symbol by Johann Rahn in a text published in 1659. This symbol was used by many writers before Rahn as a minus sign.
In 1888, in the teacher's edition of *The Elements of Algebra* by G. A. Wentworth, we find long division essentially written as it is today.
The equality sign was first used by Robert Recorde in 1557, who used a pair of parallel lines “because no two things can be more equal.”
These symbols for strict inequalities appeared in a text by Thomas Harriot, which was published in 1631. This was the first time such signs were used and accorded the same status as the equality sign.
Pierre Bouguer used these symbols in 1734. In 1670, John Wallis used similar symbols, each with a single horizontal bar, but the bar was above the '<' and '>' rather than below them.
In 1637, exponents in the modern notation (although with positive integers only) were used by Rene Descartes. Interestingly, Descartes tended not to use 2 as an exponent, usually writing $xx$ rather than $x^2$. 
The radical symbol first appeared in 1525 in a text by Christoff Rudolff, where he used this symbol without the vinculum (horizontal line). In 1637, Rene Descartes added the vinculum to the symbol.
Placement of the index within the opening of the radical sign was suggested in 1629 by Albert Girard. He suggested this notation for the cube root.
This notation was introduced by Christian Kramp in 1808 as a convenience to the printer. In 1958, Albert Eagle advocated writing \( !n \) rather than \( n! \), so that the operator would precede the argument.
A version of this symbol, also including the French word *ou* ("or"), was used in its mathematical meaning by Albert Girard in 1626, and the sign in its modern form was used by William Oughtred in 1631.
The use of $x$, $y$, $z$ to represent unknowns is due to Rene Descartes. In 1637, he introduced the use of the first letters of the alphabet to signify known quantities and the last letters to signify unknown quantities.
The first person to use $\pi$ to represent the ratio of the circumference to the diameter of a circle was William Jones in 1706. It is believed he used the Greek letter pi because it is the first letter in *perimetron* (“perimeter”).
Euler introduced $e$ for this constant 2.71828… in 1727. Some believe he chose $e$ because it was the first "unused" letter of the alphabet, since the letters $a, b, c,$ and $d$ frequently appeared elsewhere in mathematics.
This symbol for zero first appears in print in the 1200s. Chinese mathematician Qin Jiushao used 0 in 1247 in his *Mathematical Treatise in Nine Sections*. 
The infinity symbol was introduced by John Wallis in 1655. Wallis was a classical scholar and some believe that he derived this symbol for infinity from the lowercase omega, ω, the last letter of the Greek alphabet.
Sources

- Cajori, F. (1928) *A History of Mathematical Notations*
- Humez, A. (1994) *Zero to Lazy Eight*
- Smith, D. E. (1906) *History of Modern Mathematics*