

- History
- Pascal's calculator
 - uses complementary addition - subtract each digit from $n-1$ where $n = \text{base}$, + and 1 to final result
 - leading 9 must be used when subtracting
- Babbage
 - method of differences
 - $a' = a + d$
 - $b' = a' + b$
 - $a' = \text{odd numbers}$
 - $b' = \text{squares}$
 - one can continue with cubes to be $c' = b' + c$
- Taylor series = $e^x = \sum_{n=0}^{\infty} \frac{x^n}{n!} = 1 + \frac{x}{1!} + \frac{x^2}{2!} + \frac{x^3}{3!} + \dots$

- Konrad Zuse's 1938 Z1
 - the instruction set is only 8 instructions long
 - the floating point notation we use now is based from Zuse
 - his machine was binary
- IBM ASCC
 - 24-bit digits
- Manchester "Baby"
 - 7 instructions
- Princeton IAS