Mathematical Development Stages
leading to the development of the modern computer:

1. Zero and the development of place-value notation and arithmetic

2. Development of algebraic thought: abstraction and generalization

3. Development of logical thought: diagrams, graphs, and rules & methodology of formal logic

4. From classical logic to algebraic and binary logic: algebra of propositional logic

5. Development of artificial logical calculation: Shannon's thesis on the theory of switching

6. From algebra to set theory: Cantor to G$\ddot{o}$del.

7. From philosophical logic to mathematical logic

8. Development of symbolic calculus: recursive function theory, automata and formal languages