DEFINITIONS

Here is a list of definitions that you need to remember. The number in the bracket at the end of each line is the page number where the definition is given in the book. For the ones with $\star$, you only need to remember their symbolic forms and when they are true. For example, for the item “conjunction”, you just need to remember that the form is $P \land Q$ and it is true exactly when both $P$ and $Q$ are true.

This list will be updated periodically throughout the quarter.

(1) proposition [1]
(2) negation $\star$ [2]
(3) conjunction $\star$ [2]
(4) disjunction $\star$ [3]
(5) tautology [4]
(6) contradiction [4]
(7) equivalence of two propositional forms [5]
(8) conditional sentence $\star$ [10]
(9) converse [11]
(10) contrapositive [11]
(11) biconditional sentence $\star$ [12]
(12) truth set of an open sentence [18]
(13) equivalence of two open sentences [19]
(14) existential quantified sentence $\star$ [19]
(15) universal quantified sentence $\star$ [20]
(16) equivalence of two quantified sentences [23]
(17) empty set [86]
(18) subset [86]
(19) equality of two sets [88]
(20) proper subset [89]
(21) power set [90]
(22) union of two sets [95]
(23) intersection of two sets [95]
(24) difference of two sets [95]
(25) disjoint sets [96]
(26) complement of a set [98]
(27) product of two sets [100]
(28) union over a family of sets [104]
(29) intersection over a family of sets [105]
(30) a pairwise disjoint indexed family of sets [109]
(31) Principle of Mathematical Induction [115]
(32) Principle of Complete Induction [128]
(33) Well-ordering Principle [130]