What to know for quizzes and exams

Definitions

(1) Rational number
(2) Contrapositive
(3) Converse
(4) Irrational number
(5) minimum / maximum
(6) Upper bound / lower bound
(7) Bounded above / bounded below
(8) Supremum
(9) Absolute value
(10) (sequence) converges to L
(11) (sequence) is convergent
(12) (sequence) is divergent
(13) increasing / decreasing sequence
(14) strictly increasing / decreasing sequence
(15) monotone sequence
(16) diverges to $+\infty$ or $-\infty$
(17) Subsequence
(18) Limit of a function
(19) Continuous at a point
(20) Continuous on an open interval
(21) Continuous on a closed interval
(22) Differentiable
(23) Derivative (at a point)

Axioms/Theorems

(1) Well-ordering axiom
(2) Completeness axiom
(3) Archimedean principle
(4) Density of rational numbers / irrational numbers
(5) Triangle inequality
(6) Theorem on limits and algebra for sequences
(7) Squeeze Theorem
(8) Monotone convergence theorem
(9) Principle of induction
(10) Theorem on convergence and subsequences
(11) Cantor's Theorem
(12) Bolzano-Weierstrass
(13) Main corollary of Bolzano-Weierstrass
(14) Theorem on limits and sequences
(15) Theorem on limits of functions and algebra
(16) Squeeze Theorem for functions
(17) Theorem on continuity and limits
(18) Theorem on continuity and algebra

(19) Theorem on continuity and compositions
(20) Intermediate Value Theorem
(21) Boundedness Theorem
(22) Extreme Value Theorem
(23) Derivatives and algebra

Key skills

(1) Proving "if-then" statements, "for every" statements, "there exists" statements, "is unique" statements
(2) Proofs by contradiction
(3) Finding the negation of a statement
(4) Finding the contrapositive of a statement
(5) Using examples to prove / disprove statements
(6) Proving that a number is the supremum of a set
(7) Proving that a sequence converges to some value using the definition
(8) Algebra with limits of sequences: using these to determine if a sequence converges, and to what
(9) Using squeeze theorem to show sequences converge
(10) Relationship between boundedness, convergence, and monotonicity
(11) Proofs by induction
(12) Relationship between convergence/boundedness of sequences and convergence of subsequences
(13) Using the $\varepsilon - \delta$ definition to compute limits
(14) Using algebra/squeeze theorem to compute limits
(15) Using the $\varepsilon - \delta$ definition to show continuity
(16) Using algebra/compositions to show continuity
(17) Applying the $\varepsilon - \delta$ definitions of limits and continuity
(18) Applying the Intermediate Value Theorem
(19) Applying Boundedness and Extreme Value Theorems
(20) Evaluating derivatives by definition
(21) Evaluating derivatives by algebra