Exam I
Review Topics

1. Points on a Line
   Absolute Value
   Solving Absolute Value Equations & Inequalities ExI-2
   Solving Equations and Inequalities 1.1-21, 1.1-26
   Interval Notation

2. Cartesian Coordinates
   Points in Plane ExI-1
   Distance Between Points ExI-1
   Mid-Point of a Line Segment ExI-1
   Equations of Circles 1.1-41

3. Equations of Lines
   Slope of a Line
   Equation of Line through a Point \((x_0, y_0)\) with Slope \(m\) ExI-1,1.2-12
   Parallel and Perpendicular Lines 1.2-14
   Solving for the Intersection Set of Two Lines ExI-3,1.2-35

4. Functions
   Domain of a Function ExI-4,1.3-6
   Functional Notation ExI-4
   Vertical Line Test
   Composition of Two Functions 1.3-35
   Graphs of Functions
   Even/Odd Functions 1.3-29
   Special Values of Trig Functions 1.1-44

5. Inverse of Function
   Definition of the Inverse
   Horizontal Line Test
   Solving Algebraically for the Inverse Function ExI-5,1.4-15
   Graphing the Inverse Function ExI-5,1.4-34
   Functional Relationships between a Function and its Inverse
   
   \[ f^{-1}(f(x)) = x, \quad f(f^{-1}(x)) = x \]

6. Inverse Trig Functions
   Domain Restrictions for Sine, Cosine, Tangent
   Graph of Inverse Sine, Inverse Cosine, Inverse Tangent
   Functional Relationships ExI-6,ExI-7,1.4-25,1.4-41
7. Limit of a Function
   Estimating Limit
   Tabular Approach 2.1-21, 2.1-35
   Graphical Approach ExI-8, 2.1-(1-6)
   One-Side Limit ExI-8, 2.1-(1-6)

8. Algebraic Computation of Limits
   Basic Properties and Rules
   Limits of Polynomials ExI-9, 2.2-(1-3)
   Limits of Rational Expressions via Algebraic Reduction ExI-9, 2.2-(11-14)
   Limits of Trig Functions 2.2-(7-9)
   Special Limits \( \lim_{x \to 0} \frac{\sin x}{x}, \quad \lim_{x \to 0} \frac{1-\cos x}{x} \) ExI-9, 2.2-(21-25)
   Sandwich/Squeeze Rule

9. Continuity
   Definition of Continuity at a Point 2.3-(15-16)
   Properties of Continuous Functions
   One-Side Continuity at a Point
   Continuity on an Interval 2.3-(23-24)
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   Intermediate Value Theorem 2.3-(27-28)