Calculus 1, Chapter 2 Study Guide
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The following is a *brief* list of topics covered in Chapter 1 of *Thomas' Calculus.* Test questions will be chosen directly from the text. This list is not meant to be comprehensive, but only gives a list of several important topics. I reserve the right to ask you definitions and theorems on the tests. If I do so, then I will choose from the **bold-faced** items below.

2.1 Rates of Change and Limits. Average rate of change

2.2 Calculating Limits Using the Limit Laws. Limit Rules, limits of polynomials and rational functions, Sandwich Theorem.

2.3 The Precise Definition of a Limit. the formal definition of limit, given ϵ find δ.

2.4 One-Sided Limits and Limits at Infinity. Theorem 6 (relationship between one- and two-sided limits), $\lim_{\theta \to 0} \dfrac{\sin \theta}{\theta} = 1$, $\lim_{x \to \pm\infty} f(x) = L$, Rules for limits as $x \to \pm\infty$, **horizontal asymptotes**.

2.5 Infinite Limits and Vertical Asymptotes. Limits which are infinite, **vertical asymptotes**.

2.6 Continuity. Continuity at an interior point and endpoint of the domain, the Continuity Test, **removable and jump discontinuities**, composite functions, **Intermediate Value Theorem**.

2.7 Tangents and Derivatives. Slope of a Curve, tangent line, instantaneous velocity.