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| Planned Course: Calculus I Unit: Limits & Their Properties Estimated Time: 4 weeks | Course Number: M311 Grade Level: 10-12 Level/Track: college | Department: Math Date Approved: 7/15/08 |
| PA Academic Standards | Core Concepts (in question format) • Skills/Knowledge | Activities/Strategies/Study Skills (identify some activities as remedial or enrichment activities) |

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| <p>2.8.11.S Analyze properties and relationships of functions (e.g. linear, polynomial, rational, trigonometric, exponential, logarithmic).</p> | <p>Can the students use a graphical approach and numerical approach to evaluate a limit?</p> <ul style="list-style-type: none"> • SWBAT use a calculator to estimate a limit. • SWBAT find limits that fail to exist. • SWBAT develop a strategy for finding limits. • SWBAT find limits of algebraic functions, polynomial functions, rational functions, radical functions, and trigonometric functions. <p>Can the students use algebra techniques to analyze a function and find the limit?</p> <ul style="list-style-type: none"> • SWBAT determine if a limit has an indeterminate form. | <ul style="list-style-type: none"> • Use the graphing calculator to graphically and numerically examine the behavior of a rational function, investigating limits in general and methods for computing limits. • Use limits to define the concept of continuity of a function at a point in its domain. • Use the graphing calculator to graphically, numerically and analytically verify a function's continuity or discontinuity. • Use algebra techniques to verify the answers that are found using the graphing calculator | <ul style="list-style-type: none"> • Quizzes • Tests • Homework • Graded assignments • Classroom participation • Questioning • Observation |
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| | <ul style="list-style-type: none"> • SWBAT evaluate a limit by the cancellation technique. • SWBAT evaluate a limit by the rationalizing the numerator technique. • SWBAT evaluate a limit of a trigonometric functions using two special trig limits. • SWBAT determine continuity at a point. • SWBAT determine continuity on an open interval. • SWBAT determine a one-sided limit. • SWBAT determine continuity on a closed interval. • SWBAT use properties of continuous | <ul style="list-style-type: none"> • Use the graphing calculator to graphically and numerically examine the behavior of a rational function, investigating limits in general and methods for computing limits. • Use limits to define the concept of continuity of a function at a point in its domain. • Use the graphing calculator to graphically, numerically and analytically verify a function's continuity or discontinuity. • Use algebra techniques to verify the answers that are found using the graphing calculator | |
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| | <p>functions.</p> <ul style="list-style-type: none"> SWBAT apply the Intermediate Value Theorem. SWBAT determine infinite limits from a graph. SWBAT find the vertical asymptotes of a given function. SWBAT find a removable discontinuity of a given function. | | | | |
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