

# ACE Calc I

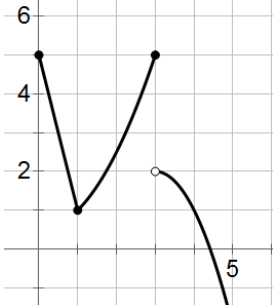
## Chapter 1 – Limits

### Assignment Sheet

*\*\*This is a tentative schedule only. Actual assignments may differ from what is shown.*

Day	Section	Page	Assignment
1	1.2 Approximating Limits	55	Odds #1,3,5,11-25 Board Problems
2	1.2 $\delta$ - $\epsilon$ Proofs for Limits	55	Odds #37,41,43,47 Board Problems
3	1.3 Evaluating Limits	67	Odds #5-57 (every other) Board Problems
4	1.3 Special Limits	67	Odds #59-69,73,83-87 Board Problems
5	1.4 Continuity Cont.	79	Odds # 1-9,17,19,27,31,35-53 Board Problems
6	1.5 Infinite Limits	88	Odds #3,5,11,25,29,31,33,35,37,43,51 Board Problems
7	3.5 Limits at Infinity	202	Odds #15-31 Board Problems
8	Review		
9	Test		

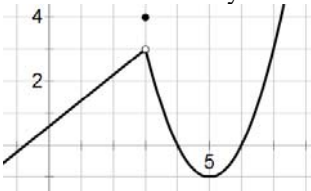
# Chapter 1 – Board Problems

	A	B	C	D
Day 1	<p>Approximate the limit using a table.</p> $\lim_{x \rightarrow 4} \frac{[x / (x+1)] - 4 / 5}{x - 4}$	<p>Approximate the limit using a table.</p> $\lim_{x \rightarrow 3} \frac{1}{x - 3}$	<p>Approximate the limit using a graph.</p> $\lim_{x \rightarrow 1} f(x)$ $f(x) = \begin{cases} x^2 + 2, & x \neq 1 \\ 1, & x = 1 \end{cases}$	<p>Use the graph to find each:</p> $f(1), \lim_{x \rightarrow 1} f(x)$ $f(3), \lim_{x \rightarrow 3} f(x)$ 

Day 2	<p>Give a <math>\delta</math>-<math>\epsilon</math> proof:</p> $\lim_{x \rightarrow -3} (2x + 5)$	<p>Give a <math>\delta</math>-<math>\epsilon</math> proof:</p> $\lim_{x \rightarrow 0} (3x - 7)$	<p>Give a <math>\delta</math>-<math>\epsilon</math> proof:</p> $\lim_{x \rightarrow 9} \sqrt{x}$	<p>Give a <math>\delta</math>-<math>\epsilon</math> proof:</p> $\lim_{x \rightarrow 1} (x^2 + 3x)$
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Day 3	<p>Evaluate:</p> $\lim_{x \rightarrow -1} \frac{2x - 3}{x + 5}$	<p>Evaluate:</p> $\lim_{x \rightarrow 0} \frac{x^2 - 3}{x}$	<p>Evaluate:</p> $\lim_{x \rightarrow 3} \frac{3 - x}{x^3 - 27}$	<p>Evaluate:</p> $\lim_{x \rightarrow 2} \frac{\sqrt{x} - \sqrt{2}}{x - 2}$
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Day 4	<p>Evaluate:</p> $\lim_{x \rightarrow 0} \frac{3(1 - \cos x)}{x}$	<p>Evaluate:</p> $\lim_{x \rightarrow 0} \frac{\sin(5x)}{\sin(2x)}$	<p>Evaluate:</p> $\lim_{\Delta x \rightarrow 0} \frac{3(x + \Delta x) - 3x}{\Delta x}$	<p>Evaluate:</p> $\lim_{\Delta x \rightarrow 0} \frac{f(x + \Delta x) - f(x)}{\Delta x}$ <p>Where: <math>f(x) = x^2 + 4x</math></p>
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Day 5	<p>Discuss the continuity.</p>  <p>Classify any discontinuities as removable or non-removable.</p>	<p>Discuss the continuity.</p> $f(x) = \frac{2x}{x^2 + 3x}$ <p>Classify any discontinuities as removable or non-removable.</p>	<p>Discuss the continuity.</p> $f(x) = \begin{cases} 4x - 1, & x \geq 2 \\ x^2 + 3, & x < 2 \end{cases}$ <p>Classify any discontinuities as removable or non-removable.</p>	<p>Discuss the continuity.</p> $f(x) = \begin{cases} \frac{2}{x - 5}, & x \neq 3 \\ 1, & x = 3 \end{cases}$ <p>Classify any discontinuities as removable or non-removable.</p>
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Day 6	<p>Evaluate:</p> $\lim_{x \rightarrow 1^+} \frac{x^2 - 6x - 7}{x + 1}$	<p>Evaluate:</p> $\lim_{x \rightarrow 4^-} \frac{x^2}{x^2 + 6}$	<p>Evaluate:</p> $\lim_{x \rightarrow -3^-} \frac{x^2 + 2x - 3}{x^2 + x - 6}$	<p>Evaluate:</p> $\lim_{x \rightarrow 5^+} f(x)$ $f(x) = \begin{cases} 3x - 1, & x \leq 5 \\ x^2, & x > 5 \end{cases}$
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Day 7	<p>Evaluate:</p> $\lim_{x \rightarrow \infty} \frac{4x^2 - 3}{2x + 1}$	<p>Evaluate:</p> $\lim_{x \rightarrow \infty} \frac{4x^2 - 3}{3 + 8x^2}$	<p>Evaluate:</p> $\lim_{x \rightarrow \infty} \frac{6x^2 + 3x}{6x^3}$	<p>Evaluate:</p> $\lim_{x \rightarrow \infty} \frac{x}{\sqrt{x^2 + 1}}$
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