ACP M211/215 (Calculus I) Resource Sheet

<table>
<tr><td>Prerequisite(s)</td><td>Two years of high school algebra, one year of high school geometry, precalculus math (or its equivalent), and trigonometry; or both M025 and M026</td></tr>
<tr><td>Course Description</td><td>Limits, continuity, derivatives, definite and indefinite integrals, applications.

A student may receive credit for only one of the following: M119, M211, J113. Credit not given for both M211 and X201. A combination of M119 and X201 is equivalent to M211 as preparation for M212. The combination of J113 and X201 is not advised as preparation for M212.</td></tr>
<tr><td>Core Transfer Library Course</td><td>Yes, CTL Name: Calculus I</td></tr>
<tr><td>IU Majors requiring M211</td><td>Satisfies General Education requirement (Mathematical Modeling course) for all undergraduate degree-seeking students at IUB.

https://math.indiana.edu/undergraduate/gened-courses.html</td></tr>
<tr><td>Textbook</td><td>Stewart's 8th edition of Calculus: Single Variable Calculus Early Transcendentals, Cengage

[ISBN: 978-1305270336]</td></tr>
<tr><td>Other Acceptable Editions</td><td>Stewart's 9th edition of Calculus: Single Variable Calculus Early Transcendentals, Cengage</td></tr>
<tr><td>Approved Supplemental Textbooks</td><td>Calculus for AP by Ron Larson and Paul Battaglia.

Larson and Edwards, Single Variable, 9th edition, Cengage learning</td></tr>
<tr><td>FINAL EXAM

Format: Multiple Choice & Open ended

DO NOT PUBLISH EXAM OR KEY during 2025-2026 academic year

Distributed to ACP teachers 2-3 weeks prior to date given.</td><td>Sections Covered:

<table>
<tr><td>1.1</td><td>2.2</td><td>3.1</td><td>3.5*</td><td>4.1</td><td>5.1</td><td>6.1</td></tr>
<tr><td>1.2</td><td>2.3</td><td>3.2</td><td>3.6</td><td>4.2</td><td>5.2</td><td>6.5</td></tr>
<tr><td>1.4</td><td>2.4</td><td>Appendix D</td><td>3.8</td><td>4.3</td><td>5.3</td><td></td></tr>
<tr><td>1.5</td><td>2.5</td><td>3.3</td><td>3.9</td><td>4.4</td><td>5.4</td><td></td></tr>
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<tr><td></td><td>2.7</td><td></td><td></td><td>4.7</td><td></td><td></td></tr>
<tr><td></td><td>2.8</td><td></td><td></td><td>4.8</td><td></td><td></td></tr>
<tr><td></td><td></td><td></td><td></td><td>4.9</td><td></td><td></td></tr>
</table>
*omit inverse trig functions

Little emphasis given to these sections</td></tr>
<tr><td>Type of calculator allowed</td><td>None</td></tr>
<tr><td>IUB Course Coordinator (25-26)</td><td>Sanjana Agarwal (sanjagar@iu.edu)</td></tr>
<tr><td>ACP Math Liaison</td><td>Brittany Runge (britstep@iu.edu)</td></tr>
<tr><td>ACP Instructor & School Handbook</td><td>https://schoolhandbook.acp.iu.edu/index.html</td></tr>
</table>

ACP Student Handbook	https://studenthandbook.acp.iu.edu/	
How IU grade will be calculated	Homework (Edfinity)	10%
	Quizzes	10%
	Non-departmental exams I, II, III	45%
	Departmental final exam	35%

Section	Suggested Textbook Problems
	8th edition 9th edition
1.1	(8th) Pages 19-23: #2, 7, 8, 34, 35, 42, 47, 73, 75, 76; problems 48, 79, 80 are optional. (9th) Pages 17-21: #2, 15, 16, 42, 43, 50, 55, 81, 83, 84; problems 56, 87, 88 are optional.
1.2	(8th) Pages 33-34: #3, 4, 5, 14, 18; problem 8 is optional. (9th) Pages 33-34: #3, 4, 5, 16, 19; problem 8 is optional.
1.4	(8th) Page 53: #2, 3, 4, 8, 9 (sketch the graphs by hand on paper), 19(b), 20. (9th) Page 52: #1, 2, 6, 7 (sketch the graphs by hand on paper), 17(b), 18.
1.5	(8th) Pages 66-67: #1, 15, 18, 22, 23, 25, 31, 33, 35, 36, 37, 51, 56, 57; optional 17. (9th) Pages 64-66: #1, 17, 20, 26, 27, 28, 35, 37, 39, 40, 41, 57, 62, 63; optional 19.
2.2	(8th) Pages 92-94: #6, 11, 16, 17, 33, 40, 41. (9th) Pages 92-93: #6, 12, 16, 17, 31, 37, 38.
2.3	(8th) Pages 102-104: #5, 10, 12, 13, 22, 25, 30, 36, 37, 39, 42, 44, 49, 64. (9th) Pages 102-104: #6, 10, 14, 15, 23, 27, 32, 38, 39, 41, 44, 46, 51, 66.
2.4	(8th) Pages 113-114: #1, 2, 17, 18, 21, 39, 41, 42; optional 43. (9th) Pages 113-114: #1, 2, 17, 18, 21, 39, 41, 42; optional 43.
2.5	(8th) Pages 124-126: #12, 19, 20, 22, 23, 28, 41, 45, 49(a,b), 51, 55, 58, 62, 67, 68. (9th) Pages 124-126: #14, 21, 22, 24, 26, 29, 43, 47, 51(a,b), 53, 57, 60, 64, 71, 72.
2.6	(8th) Pages 137-140: #7, 9, 18, 23, 24, 27, 28, 34, 38, 39, 48, 36, 75, 78, 80. (9th) Pages 137-140: #7, 8, 20, 25, 26, 29, 30, 36, 38, 39, 48, 75, 77, 80.
2.7	(8th) Pages 148-151: #3, 5, 7, 10, 15, 20, 24, 31, 37, 38, 59, 60.

	(9th) Pages 149-152: #3, 6, 8, 10, 13, 23, 28, 40, 43, 44, 57, 58.
2.8	(8th) Pages 160-164: #3, 4, 8, 9, 15, 23, 27, 29, 43, 44, 49, 50; problem 63 is optional. (9th) Pages 161-165: #3, 5, 9, 11, 15, 23, 29, 31, 43, 44, 49, 50; problem 63 is optional.
3.1	(8th) Pages 180-182: #3, 11, 14, 19, 23, 35, 37, 55, 56, 61, 71; problem 64 is optional. (9th) Pages 181-183: #3, 10, 11, 17, 33, 39, 41, 59, 60, 65, 75; problem 68 is optional.
3.2	(8th) Pages 188-190: #4, 7, 9, 11, 23, 28, 44(a,b), 48, 50, 54, 61. (9th) Pages 189-191: #8, 11, 17, 19, 27, 32, 46(a,b), 50, 52, 56, 63.
Appendix D	(8th) Page A32: #3, 9, 19, 29, 33, 42. (9th)
3.3	(8th) Pages 196-197: #6, 13, 18, 19, 21,39, 41, 43, 44, 48, 50; problem 20 is optional. (9th) Pages 197-199: #10, 19, 24, 25, 27, 45, 52, 53, 54, 58, 60; problem 26 is optional.
3.4	(8th) Pages 204-205: #2, 3, 5, 19, 25, 30, 37, 40, 41, 47, 50, 71. (9th) Pages 206-207: #1, 4, 5, 22, 27, 32, 39, 41, 42, 53, 56, 77.
3.5*	**inverse trig functions are not covered in this section** (8th) Pages 215-217: #1, 11, 19, 21, 26, 27, 31, 39, 75, 76. (9th) Pages 214-216: #1, 15, 16, 23, 28, 31, 35, 43, 63, 64.
3.6	(8th) Page 223: #9, 12, 13, 15, 16, 23, 29, 33, 39, 42, 45, 47, 48, 50. (9th) Page 224: #9, 13, 15, 18, 19, 29, 35, 39, 45, 48, 51, 53, 54, 56.
3.8	(8th) Pages 242-244: #2, 3, 9, 10, 11, 14, 15, 19, 21, 22(a). (9th) Pages 245-246: #2, 3, 9, 10, 11, 14, 15, 19, 21, 22(a).
3.9	(8th) Pages 249-251: #1, 2, 7, 12, 13, 17, 18, 22, 33, 45. (9th) Pages 251-254: #1, 2, 5, 12, 13, 17, 18, 22, 35, 47.
3.10	(8th) Pages 256-257: #2, 3, 4, 6, 11, 14(a), 15, 21, 30, 31, 25, 27, 33, 36. (9th) Pages 258-259: #2, 3, 4, 6, 11, 12, 17, 19, 25, 33, 35, 38, 39, 41, 44.
4.1	(8th) Pages 283-285: #4–7, 10–13, 28, 36, 37, 43, 49, 53, 59, 76, 77. (9th) Pages 286-288: #4–7, 10–13, 28, 36, 39, 46, 53, 57, 63, 80.
4.2	(8th) Pages 291-292: #1, 3, 5, 8, 9, 10, 11, 13, 18, 19, 22, 23(a), 26, 27, 31, 37. (9th) Pages 295-296: #1, 3, 9, 12, 13, 14, 15, 17, 22, 23, 26, 27(a), 30, 31, 35, 41.

4.3	(8th) Pages 300-303: #6, 7, 8, 11, 16, 17, 22, 25, 27, 28, 33, 34, 42, 43, 44, 45, 49; problem 81 is optional. (9th) Pages 305-308: #5, 7, 8, 11, 25, 26, 32, 35, 37, 38, 42, 50, 53, 54, 55, 59; problem 89 is optional.
4.4	(8th) Pages 311-312: #2, 6, 15, 18, 19, 25, 26, 27, 40, 47, 51, 57, 63. (9th) Pages 316-317: #2, 6, 15, 18, 19, 25, 26, 27, 34, 47, 51, 57, 63.
4.5	(8th) Pages 321-322: #2, 12, 15, 17, 21,30, 42, 45, 48, 50. (9th) Page 327: #2, 12, 15, 17, 21,30, 42, 45, 48, 50.
4.7	(8th) Pages 337-340: #2, 7, 11, 13, 15, 18, 22, 25, 27, 33, 35, 62. (9th) Pages 342-346: #2, 7, 11, 13, 15, 19, 26, 29, 31, 37, 41, 68.
4.8	(8th) Pages 348-349: #4, 7, 11, 14 (find the third approximation). (9th) Pages 354-355: #4, 7, 11, 14 (find the third approximation).
4.9	(8th) Page 355-357: #3, 12, 13, 15, 17, 21, 27, 39, 41, 49, 51, 52, 53, 54, 64, 74, 75, 77. (9th) Pages : #
5.1	(8th) Pages 375-377: #2, 3, 5, 8 (n = 4 only), 15, 17, 24; problem 26 is optional. (9th) Pages 381-383: #2, 3, 5, 7 (n = 4 only), 11, 13, 22; problem 24 is optional.
5.2	(8th) Pages 388-390: #3, 4(a), 18, 19, 27, 33, 34, 36, 37, 41, 42, 43, 51, 53, 55, 57. (9th) Pages 394-397: #3, 4(a), 20, 21, 35, 36, 42, 45, 47, 51, 52, 53, 61, 63, 65, 67.
5.3	(8th) Pages 399-402: #2, 3, 7,11, 12, 13, 14, 17, 18, 29, 37, 41, 45, 48, 63, 66, 73, 82; problem 76 is optional. (9th) Pages 406-408: #2, 3, 9, 13, 14, 15, 16, 19, 20, 37, 47, 51, 55, 58, 71, 74, 83, 92; problem 86 is optional.
5.4	(8th) Pages 408-410: #11, 29, 31, 33, 49, 53, 59, 60. (9th) Pages 415-416: #15, 35, 39, 41, 57, 61, 69, 70.
5.5	(8th) Pages 418-419: #1, 4, 10, 18, 32, 33, 36, 41, 42, 48, 56, 57, 59, 63, 69. (9th) Pages 425-426: #1, 4, 12, 22, 24, 39, 42, 47, 48, 54, 60, 63, 65, 69, 75.
6.1	(8th) Page 434: #2, 3, 4, 5 (sketch the region and find its area), 8, 14, 17, 20. (9th) Pages 442-443: #2, 3, 4, 5, 6, 20, 21, 22.
6.5	(8th) Pages 463-464: #1, 5, 6, 7, 9, 10, 17; problem 24 is optional. (9th) Pages 475-476: #1, 4, 6, 7, 9, 10, 17; problem 25 is optional.

On-campus Course Outline (MWF for 50 minutes + 1 day 50 min. recitation)

Week	Sections
1	Review 1.1 – 1.5
2	2.2, 2.3
3	2.3, 2.5
4	2.6, review, **EXAM 1**
5	2.7, 2.8, 3.1, 3.2
6	Appendix D, 3.3, 3.4
7	3.5, 3.6, 3.9
8	3.9, review, **EXAM 2**
9	4.1, 4.2, 4.3
10	4.4, 4.5
11	4.7, 4.9
12	5.1, review, **EXAM 3**
13	5.2, 5.3
14	5.4, 5.5
15	6.1, 6.5, review

Final Exam given in 2-hour time block

Course Outline Details:

Chapter 1
- 1.4 – example 3 type problems not necessary
- 1.5 – **omit inverse trig throughout the course**

Chapter 2
- 2.3 – omit theorems 2 and 3 (squeeze theorem)
- 2.5 – omit theorem 10 (intermediate value theorem)
- 2.6 – skip the section on precise definitions

Chapter 3
- 3.1 – skip "definition of number *e*"
- 3.6 – cover the derivative of log, omit number *e* as limit

Chapter 4

- 4.4 – omit indeterminate differences and indeterminate powers
- 4.5 – omit slant asymptotes
- 4.7 – omit applications to business and economics

Chapter 5

- 5.1 – omit questions with intense algebra of the type example 2; omit questions of the type example 4
- 5.2 – omit midpoint rule
- 5.5 – omit symmetry