

Math 122 Homework

Spring 2019 Semester

Class 1 Mon. Jan. 9

1. Review Section 3.3 (derivatives of trig functions) in our textbook.
2. Memorize the derivative formulas listed in the **Table of Derivatives & Rules** on this website. Click on <https://www.brainiac tutoring.com/calculusii> .
3. Practice problems on page 196: 1-21 (odd); 29, 31, 33, & 35. (Even though “practice problems” are not graded, work them to prepare for quizzes and exams.)
4. **Quiz 1** on Monday covering the practice problems assigned today and the derivative formulas in the aforementioned table.

(No calculators. Generally speaking, I construct quizzes and tests so that calculators are not needed.)

Class 2 Fri. Jan. 11

1. Study the method of implicit differentiation in Section 3.5.
 2. Practice problems on page 215: 1, 3, 5, 9, & 11.
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Class 3 Mon. Jan. 14

1. **Quiz 1** (10-minute quiz at the end of class).
2. Continue studying implicit differentiation on pp. 208-213 in Section 3.5.
3. Additional implicit differentiation practice problems on page 215: 15, 21, 23, 25, & 29.

Remark. Note that the number **15** is in red in the textbook. This indicates that Stewart gives hints for this particular problem at the website: <http://stewartcalculus.com/>.

(Hints are not available for the 8th edition, but they are for the edition CALCULUS 7E. Click on HOMEWORK HINTS. Unfortunately, the numbering of the problems differs from the 8th edition.)

4. **Quiz 2** over the practice problems assigned in Classes 2, 3, & 4 on Friday.
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Class 4 Wed. Jan. 16

1. Study *Derivatives of Inverse Trig Functions* on pp. 213-214.
Suggestion. Study the definitions of the inverse trig functions on pp. 63-66.
 2. Memorize the six differentiation formulas at the bottom of p. 214.
 3. Practice problems on page 216: 35, 39, 49, 51, 53, 55, 57, & 63.
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Class 5 Fri. Jan. 18

1. **Quiz 2** (10-minute quiz at the end of class).
2. Memorize the differentiation formulas for inverse trig functions and practice the problems listed in Class 4.
3. **Quiz 3:** Work the problems below outside of class at your leisure. You may use your textbook & class notes but no other sources.

This must be your own work. Do not discuss this quiz with others. It is **due on Wednesday, January 23.**

Copy each problem before you present its solution (see the Homework Rules at http://facstaff.cbu.edu/~lbecker/122_Hpg.htm).

Problem 1: 30 on p. 215; **Problem 2:** 40 on p. 216 (find y' and y'' at $x=1$; you need not find y'''); **Problem 3:** 53 on p. 216; **Problem 4:** 58 on p. 216.

Monday, Jan. 21 MLK Day Observance

Class 6 Wed. Jan. 23

1. See the revised **Table of Derivatives & Rules** at <https://www.brainiac tutoring.com/calculusii> and memorize.
 2. Study the Related Rates examples in Section 3.9.
 3. Practice problems on page 249: 1, 3, 5, 7, 9, 13, 15, 17, & 29.
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Class 7 Fri. Jan. 25

1. **Quiz 4:** Work the problems below outside of class at your leisure. You may use your textbook & class notes but no other sources.

This must be your own work. Do not discuss this quiz with others. It is **due on Monday, Jan. 28**.

Copy each problem before you present its solution (see the Homework Rules at http://facstaff.cbu.edu/~lbecker/122_Hpg.htm).

P1: 4 on p. 249; **P2:** 6 on p. 249; **P3:** 13 on p. 249; **P4:** 16 on p. 249.

2. Study Section 4.2. Memorize the statements of the following important results: Rolle's Theorem, The Mean Value Theorem, Theorem 5 on p. 290, & Corollary 7 on p. 291.
 3. Practice problems on p. 292: 5, 7, 9, 11, 13, 15, 17, 29, 32, 34, & 37.
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Class 8 Mon. Jan. 28

1. Study Section 4.2. Memorize the statements of the following important results: Rolle's Theorem, Mean Value Theorem, Theorem 5 on p. 290, & Corollary 7 on p. 291.
 2. Practice problems on p. 292: 5, 7, 9, 11, 13, 15, 17, 29, 32, 34, & 37.
 3. **Quiz 5** on Friday over the practice problems assigned today and on Wednesday (Classes 8 & 9).
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Class 9 Wed. Jan. 30

1. Memorize the statement of the Increasing/Decreasing Test on p. 293.
 2. Practice problems on p. 301: 9(a), 11(a), 13(a).
 3. Begin reading Section 4.9.
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Class 10 Fri. Feb. 1

1. **Quiz 5** today.
2. Study Section 4.9 (Antiderivatives).
3. Practice problems on p. 355: 1-21 (odd) & 59-65 (odd).
4. **Quiz 6:** Monday, turn in the following problems on p. 355: 6, 12, 14, 22, & 62.

Extra Credit. 74 on p. 357 (Express your answer in *feet*. Feel free to use a calculator to do the arithmetic. Compare to information given on the Web.)

Test 1 on Monday, Feb. 18. It will cover Sections 3.3, 3.5, 3.9, 4.2, 4.4, 4.9, 5.1, 5.4 (pp. 402-404) and ?.

Class 11 Mon. Feb. 4

1. Memorize all of the antiderivative formulas in the table: [Table of Derivatives and Antiderivatives](#).
 2. In Section 5.4, study pp. 402-404.
 3. Practice problems on p. 408: 1-17 (odd).
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Class 12 Wed. Feb. 6

1. Read about sigma notation (aka summation notation) in Appendix E (pp. A34-A37).
 2. Memorize the summation formulas given in Theorem 3 on p. A37.
 2. Practice the following problems on p. A38: 1-39 (odd).
 3. Begin studying Section 5.1.
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Class 13 Fri. Feb. 8

1. **Quiz 7** on Monday over the [Basic Integration Formulas](#) and the practice problems assigned in Classes 11, 12, 13 (today).
 2. Study Section 5.1.
 3. Practice problems on p. 375: 1, 3, & 5.
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Class 14 Mon. Feb. 11

1. **Quiz 7**
2. Practice problems on p. 377: 21, 23, 24 (an answer: $y = \sqrt{1+x}$ on $[0, 3]$), 25 & 26 (answer to (b) is $\frac{1}{4}$).
3. Begin studying Section 5.2.
4. Reminder: **Test 1 in one week.**

It included lectures in Classes 1-15; practice problems; quizzes; Sections 3.3, 3.5, 3.9, 4.2, 4.9; Appendix E; 5.1, 5.4 (pp. 402-404); Sec 5.2 (whatever is covered today & Wed.)

Class 15 Wed. Feb. 13

1. Study pp. 378-384 in Section 5.2 for Test 1 on Monday.
 2. For Test 1 on Monday, memorize Definition 2 on p. 378, Theorems 3 & 4 on p. 380, & the summation formulas on p. 381.
 3. For Test 1, be able to work problems similar to the following examples Ex. 1, Ex. 2, Ex. 3(a) & the following problems on p. 389: 17, 19, 21, 23, 25, 27, 28, 29, & 31(ignore the part having to do with evaluating the integral using a computer algebra system).
 4. I put the link to Sample Test 1 in the column with the Quiz Solutions:
<https://www.brainiactutoring.com/calculusii> .
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Class 16 Fri. Feb. 15

1. For Wed. Feb. 20, study the rest of Section 5.2 (pp. 382-388.)
 2. Practice problems for Wednesday: 33, 35, 37, 39, 43, 47, 49, 55, & 57 on p. 390.
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Class 17 Mon. Feb. 18 **Test 1**

Class 18 Wed. Feb. 20

1. Study Section 5.3.
 2. Practice problems on p. 400: 19-33 (odd) & 45.
 3. **Quiz 8** due Friday: 24, 38, 42, 48, & 60 on p. 390.
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Class 19 Fri. Feb. 22

1. Reminder: Practice problems on p. 400: 19-33 (odd) & 45.
 2. **Quiz 9** due Monday: Use the FTC-2 to evaluate the following integrals on p. 400: 21, 30, 32, 37, & 46.
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Class 20 Mon. Feb. 25

1. Practice problems using the FTC-1 on p. 400: 59, 61, 63, & 67.
 2. In Section 5.4, read about the “Net Change Theorem” on pp. 405-408.
 3. Practice problems using the “Net Change Theorem” on p. 409: 51, 57, 60, 62, 63, & 67.
 4. **Quiz 10 on Friday** covering Classes 19 & 20.
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Class 21 Wed. Feb. 27

1. Study Section 5.5 (Substitution Rule).
 2. Practice problems using the Substitution Rule on p. 419: 1-25 (odd).
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Class 22 Fri. March 1

1. **Quiz 10**
 2. Study Section 5.5.
 3. More practice problems using the Substitution Rule on p. 419: 53-73 (odd).
 4. **Quiz 11 for Mon. 3/11**: Turn in Problems 8, 12, 28, 40, 54, 56, 62, 72, & 82 on pp. 418-420.
(Copy the problem before you work it. Write on one side only and be neat and organized so that I can read and follow your work. Staple all pages together in the upper left-hand corner.
Put the problems in order. I will deduct points if you do not follow these simple requests.)
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Spring Recess March 4-8

Class 23 Mon. March 11

1. **Quiz 11 due.**
 2. Study Section 6.1.
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Class 24 Wed. March 13

1. Practice problem on p. 434: 3, 5, 10, 15, 17, 21, & 48.
 2. **Quiz 12 due Friday**: On p. 434, turn in Problems 11, 14, 20, 24, & 49.
 3. Read how to compute volumes using cross-sections in Section 6.2.
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Class 25 Fri. March 15

1. **Quiz 12 due.**

2. Read Section 7.1.
3. **Quiz 13 due Monday**: On p. 421, decide if 2, 6, 8, & 14 are true or false: (Follow the directions about explaining why if true or giving an example if false!)

Also, turn in on p. 476: 2, 3, & 4. Extra Credit: Problem 6 on p. 476.

Test 2 on Monday, March 25 covering Sections 5.1, 5.2, 5.3, 5.4, 5.5, 6.1, 6.2, 6.5, & 7.1.

Class 26 Mon. March 18

1. **Quiz 13 due.**
 2. Study Section 6.3
 3. **Quiz 14 due Wed**: On p. 446, turn in Problems 1, 2, & 4. Also, on p. 476, turn in 10 & 12. *Extra Credit*: Problem 6 on p. 446.
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Class 27 Wed. March 20

1. **Quiz 14 due.**
 2. Read the article by Kasube about using the acronym LIATE to choose u and dv .
 3. Practice these “volume” problems on p. 446: 6, 7, 9, 11, 14, & 15.
 4. Practice these “integration by parts” problems on p. 476: 15, 17, 18, 19, 23, 27, 29, 37, & 39.
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Class 28 Fri. March 22

1. **Test 2 on Monday will cover Sections 5.1, 5.2, 5.3, 5.4, 5.5, 6.1, 6.2, & 7.1.**
2. Read the article by Murty on “tabular integration by parts.”
3. For next Wed., read Sec. 6.5 (average value of a function).
4. Practice on p. 463: 1, 2, 3, 7, & 8.

I put the link to **Sample Test 2** in the column with the Quiz Solutions under Quiz 14:

<https://www.brainiactutoring.com/calculusii> .

Class 29 Mon. March 25 **Test 2**

Class 30 Wed. March 27

1. Study Section 6.5. Practice problems on p. 463: 1, 2, 3, 7, 8 & 9.
 2. Study Section 7.2. Practice problems on p. 484: 1, 3, 5, & 7.
 3. **Quiz 15 due Mon**. On p. 463, turn in Problems 8, 10, & 18. Also, 2 & 4 on p. 484.
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Class 31 Fri. March 29

1. More practice problems on p. 484: 9, 11, 13, 15, 21, 23, 25, 27, 29, & 31.
 2. Reminder: **Quiz 15 due Mon.**
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Class 32 Mon. April 1

1. **Quiz 15 due.**
 2. Practice problems on p. 484: 22, 31, & 61.
 3. **Quiz 16 for Wed**: p. 484: 13, 14, 24, 26, & 28. *Extra Credit*: Problem 62 on p. 485.
 4. Read Sec 7.3.
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Class 33 Wed. April 3

1. **Quiz 16 due.**
 2. Continue studying Sec. 7.3.
 3. Practice problems on p. 491: 1, **2**, 3, 5, 9, **10**, **13** & 15.
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Class 34 Fri. April 5

1. **Quiz 17 due Monday.** On p. 491, turn in Problems 4, 7, 8, 12, & 23. *Extra Credit:* Problem 24 on p. 491.
 2. Read Section 7.4.
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Class 35 Mon. April 8

1. **Quiz 17 due.**
 2. Bring an electronic device on Friday for the IDEA Course Evaluation of Math 122.
 3. **Test 3 on Wednesday, April 17:** Sections 7.1 (incl. tabular integration by parts), 7.2, 7.3, 7.4, 7.5, & 7.x, ...
 4. Practice problems on p. 501: 1-11 (odd)
 5. **Quiz 18 due Wed.** On p. 501, turn in Problems 1b, 4a, 4b, 9, & 10.
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Class 36 Wed. April 10

1. **Quiz 18**
 2. Read Sec. 7.5.
 3. **Quiz 19 (worth 20 pts) due Monday.** On p. 501, turn in 8, 12, 16, 24, & 32. On p. 508, turn in 23, 26, 36, 44, & 66.
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Class 37 Fri. April 12

1. **IDEA Course Evaluation--20 minutes.**
 2. Read Sec. 8.1.
 3. Practice problems: 1, 9, 11, 13, **15**, & 19 on p. 549.
 4. **Reminder:** Projects for extra credit are due April 24.
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Class 38 Mon. April 15

1. **Quiz 19**
2. **Test 3 on Wednesday:** Sections 7.1 (incl. tabular integration by parts), 7.2, 7.3, 7.4, & 7.5. Also, Sec. 6.5 (average value of a function) & Sec. 8.1 (arclength).
3. Suggested arc length problems to practice for the test: **1**, 9, 11, 13, **15**, & 19 on p. 549.

For Monday, April 22 (after Easter):

1. In Section 7.7, study the Midpoint & Trapezoidal rules on pp. 514-519. Also, look at both of the "Midpoint Rule" examples on the website.
 2. Practice problems: 7b & 9b on p. 524.
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Class 39 Wed. April 17 **Test 3**

Easter Recess April 18-21

Class 40 Mon. April 22

1. Study the Trapezoidal Rule in Section 7.7.
 2. In Section 7.8, study pages 527-531.
 3. **Quiz 20 due Wed.** On p. 524, turn in 9(a), 9(b), 18(a), & 18(b). Also, 41 & 42 on p. 535.
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Class 41 Wed. April 24 (last day of class)

1. Practice problems involving improper integrals on page 535: 5, 7, 9, 13, 17, 19, 23, 27, & 29.
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Final Comprehensive Exam: Tuesday, April 30, 8:30 a.m.
