

Calculus

Math 3B – MW 4:30PM – Spring 2012

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<http://www.saddleback.edu/faculty/Lperez>

Text: Calculus, Ninth Edition, Anton, Bivens, Davis

Course Website: <http://www.saddleback.edu/faculty/Lperez/Algebra2go>

- or - www.Algebra2go.com

Course Overview: (PreReq: M3A) Topics include integration and differentiation of: trigonometric, exponential, logarithmic, and hyperbolic functions. Topics also include indeterminate forms of limits, infinite series and conics. AA/AS General Education-Math Competency.

Homework: To succeed in this class you must do your homework. Homework will be assigned throughout the semester and will be collected on the same day as the quizzes. Each homework assignment counts as five points on each quiz. **Late homework will not be accepted!**

Quizzes: There will be 11 quizzes as indicated on the class schedule. Each quiz is worth 10 points. (5 points from the homework and 5 points total for your correct work on the quiz). You will be able to drop 1 quiz scores. **No make up quizzes will be allowed!**

Exams: There will be 3 exams administered throughout the semester, each worth 150 points. You will be allowed to drop one exam (Not the Final). Therefore there are **no make-up exams allowed!!!**

Final Exam: The final exam for this class is on Monday, May 14, 2012 @ 5:15pm.

The final exam is worth 200 points and will cover through Chapter 10.

Attendance & Cell Phones: All students are expected to attend each class meeting. If you miss class for any reason, you are responsible for getting the class notes. It is your responsibility to officially withdraw from the course. A student may be dropped due to excessive absences. **Turn off your cell phones or pagers when you enter this classroom!** Cell phone and pager disruptions will not be tolerated!

Accommodated testing for students with disabilities: All students who have been authorized for academic adjustments/accommodations for examinations/tests/quizzes should submit the proper authorizations forms within the first two weeks of the course.

Academic Honor Code: Saddleback College students are responsible for regulating their own conduct in accordance with the Code of Conduct set by the District Board of Trustees. The Code of Conduct is outlined in the Student Handbook. Cheating will not be tolerated. I strongly recommend that each student read and understand the Students Rights and Responsibilities as outlined in your Student Handbook.

Grading: Here are the total points possible for this course:

Your course grade is final! There are no extra credit assignments in this course at any time. Under no circumstances will a grade be lowered to allow a student to repeat the course.

Quizzes	100 points
Exams	300 points
Final Exam	200 points
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Total	600 points

Grading Scale:

90% - 100%	A
80% - 89.9%	B
70% - 79.9%	C
60% - 69.9%	D
Below 59.9%	F

Calculus 3B Student Learning Outcomes

Math 3B:

Students who successfully complete Math 3b will be able to:

1. Demonstrate mastery of the advanced computation techniques required for second semester calculus.
2. Demonstrate mastery of the advanced techniques of integration covered in second semester calculus.
3. Demonstrate proficiency in graphing, including the use of polar coordinates.

Additional Resources:

- **My Faculty Website:**
<http://www.saddleback.edu/faculty/lperez>
- **Course Website:**
<http://www.saddleback.edu/faculty/lperez/algebra2go/calculus>
- **Textbook Website:**
<http://bcs.wiley.com/he-bcs/Books?action=index&bcsId=4834&itemId=0470183497>
This site has a variety of study tools, applets, and more!
- Free tutoring is available in the LAP (Learning Assistance Program) located in Village 8.
- Also try <http://www.wolframalpha.com> to supplement your learning.
- Calculus Applet just for **YOU**: <http://calculusapplets.com>

MATH 3B

MW 4:30 - 7 PM

Tentative Schedule

Larry Perez

Spring 2012

lperez@saddleback.edu

Week	Monday	Tuesday	Wednesday	Thursday	Friday
1	9 Jan 4.3 & 6.1	10	11 Quiz#1 6.2 - 6.3	12	13
2	16 Martin Luther King Day	17	18 Quiz#2 6.4	19	20
3	23 6.5	24	25 Quiz#3 6.7	26	27
4	30 6.8	31	1 Feb Quiz#4 7.1 & Review	2	3
5	6 Exam #1	7	8 Quiz#5 7.2	9	10
6	13 7.3	14	15 7.4	16	17 President's Day
7	20 President's Day	21	22 Study Day	23	24
8	27 7.5 - 7.6	28	29 Quiz#6 7.7	1 March	2
9	5 7.8	6	7 Quiz#7 8.2 & 8.4	8	9
10	12	13	14 Spring Recess	15	16
11	19 Review	20	21 Quiz#8 Exam #2	22	23
12	26 9.1 - 9.2	27	28 9.2 - 9.3	29	30
13	2 April 9.4	3	4 9.5	5	6
14	9 9.6	10	11 Quiz#9 9.7	12	13
15	16 9.8 - 9.9	17	18 Quiz#10 9.10 & Review	19	20
16	23 Exam #3	24	25 10.2	26	27
17	30 10.3	1 May	2 Quiz#11 10.4	3	4
18	7 10.5	8	9 10.6 & Review	10 Study Day	11
19	14 5:15pm Final Exam	15	16	17	18

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Homework Assignments (Odd Problems)

Note: Additional problems may be assigned!

Sec. 4.3 # 1-7, 11-43, 47 odd

Sec. 6.1 # 1-33 odd

Sec. 6.2 # 1-29, 35-69 odd

Sec. 6.3 # 1-9, 15-35, 41-49, 55-77 odd

Sec. 6.4 # 1-23 odd

Sec. 6.5 # 1, 7-43, 55-59 odd

Sec. 6.7 # 1-9, 13-47 odd

Sec. 6.8 # 1, 3, 9-43, 49-55 odd, 58, 70

Sec. 7.1 # 1-29 odd

Sec. 7.2 # 1-37, 43, 47-63, 64 odd

Sec. 7.3 # 1-51, 59, 61 odd

Sec. 7.4 # 1-25, 31, 33, 37-47 odd

Sec. 7.5 # 1-33, 39, 41 odd

Sec. 7.6 # 49-69 odd

Sec. 7.7 # 1-17, 45 odd

Sec. 7.8 # 3-31, 37, 39, 47-51, 55 odd

Sec. 8.2 # 1-13 all

Sec. 8.4 # 1-10 all

Sec. 9.1 # 7-29 odd

Sec. 9.2 # 1-11, 17-23 odd

Sec. 9.3 # 3-15, 21, 23 odd, 29-32 all

Sec. 9.4 # 1-25 odd

Sec. 9.5 # 1-19, 25-47 odd

Sec. 9.6 # 1-27, 33-45 odd

Sec. 9.7 # 1-23, 37 odd

Sec. 9.8 # 1-23, 29-49 odd

Sec. 9.9 # 3-13 odd (Optional)

Sec. 9.10 # 1-35 odd, 36-38 all

Sec. 10.2 # 1-15, 21-45 odd

Sec. 10.3 # 25-45, 51, 53 odd

Sec. 10.4 # 1-25 odd

Sec. 10.5 # 3-11 odd

Sec. 10.6 # 1-11 odd

Things to know!

Math 3B

Derivatives of trigonometric functions: (Section 2.5 in your text)

$$\frac{d}{dx}[\sin x] = \cos x \quad \frac{d}{dx}[\cos x] = -\sin x \quad \frac{d}{dx}[\tan x] = \sec^2 x \quad \frac{d}{dx}[\cot x] = -\csc^2 x$$

$$\frac{d}{dx}[\sec x] = \sec x \tan x \quad \frac{d}{dx}[\csc x] = -\csc x \cot x$$

Trigonometric Identities:

$\cos^2 \theta + \sin^2 \theta = 1$ (Know how to derive the other two Pythagorean Identities)

$$\cos(-\theta) = \cos \theta \quad \sin(-\theta) = -\sin \theta$$

$$\sin 2\theta = 2 \sin \theta \cos \theta \quad \cos 2\theta = \cos^2 \theta - \sin^2 \theta$$

$$\sin^2 \frac{\theta}{2} = \frac{1 - \cos \theta}{2}; \quad \cos^2 \frac{\theta}{2} = \frac{1 + \cos \theta}{2} \quad (\text{Note: Derived from Double Angle Formula } \cos 2\theta.)$$

Graphs of the form $y = e^x$ and $y = \ln x$ including domain and range.

Tests for Symmetry:

$$f(-x) = f(x) \Rightarrow \quad \text{Symmetry about the y-axis.}$$

$$f(-x) = -f(x) \Rightarrow \quad \text{Symmetry about the origin.}$$

First and Second Derivative Tests:

You must know how to apply these tests. You should review Sections 3.2 through 3.6 in your text.

Derivatives and Integrals:

$$\frac{d}{dx}[\log_b x] = \frac{1}{x \ln b}, \quad x > 0 \quad \frac{d}{dx}[\ln x] = \frac{1}{x}, \quad x > 0 \quad \frac{d}{dx}[b^x] = b^x \ln b \quad \frac{d}{dx}[e^x] = e^x$$

$$\int b^x dx = \frac{b^x}{\ln b} + C \quad \int e^x dx = e^x + C$$

Important Limits:

$$\lim_{x \rightarrow 0} (1+x)^{1/x} = e; \quad \lim_{x \rightarrow \infty} \left(1 + \frac{1}{x}\right)^x = e \quad (\text{Note: The second limit is derived from the first}$$

using the substitution $u = \frac{1}{x}$.)

$$\lim_{x \rightarrow \infty} \frac{x^n}{e^x} = 0; \quad \lim_{x \rightarrow \infty} \frac{e^x}{x^n} = \infty \quad \text{and the other forms of this limit!}$$