

Course Outline

Math 204 - Summer 2009

Class 1 - Wednesday, June 3

Lecture: Course Information ([Syllabus](#), [Textbook Info](#), [Calculator Info](#))
Natural numbers, integers, rational and real numbers (A.1)
[Decimals and Fractions](#) - the decimal representation of irrational numbers (A.1)
Polynomials - degree, adding and multiplying them (A.1, A.2)
The zero product rule (A.2)
The difference of squares theorem (A.2)

Homework: [Questions](#)

Also posted: [Quiz 1 Information](#), [Solving Linear Equations](#)

Extra credit assignment: We proved in class that terminating and repeating decimals always represent rational numbers. Prove the converse: that every rational number, when written as a decimal, is either terminating or repeating.

Class 2 - Thursday, June 4

Lecture: Completing the Square (handouts: [part 1](#), [part 2](#), [part 3](#))
[The Real Number System](#)
[Radical Expressions](#)
Graphs of Equations
Graphing Straight Lines

Homework: [Problem Set 1](#)

Also posted: [Quiz 2 Information](#), [Basic Percent Problems](#), [Linear Word Problems](#), [Quadratic Word Problems](#)

Class 3 - Monday, June 8

Lecture: Average velocity
[Writing equations of lines](#) (1.3)
[Graphing a parabola](#)
Functions (1.1)

Homework: [Problem Set 2](#)

Also posted: [Quiz 3 Information](#)

Extra credit assignment: Suppose that towns A and B are s distance away from each other. If we travel from A to B with an average speed of v_1 and from B to A with an average speed of v_2 , compute the average speed for the entire roundtrip in terms of s , v_1 and v_2 .

Class 4 - Wednesday, June 10

Lecture: [Optimization 1](#) (1.4)
How to take the absolute value of a graph
Factoring criteria for quadratic equations
Parametric equations

Also posted: [Quiz 4 Information](#)

Class 5 - Thursday, June 11

Lecture: Functions and their graphs (1.1, 1.2)
Quadratic inequalities
Review of exponents (A.1, 4.1)
[Logarithms 1](#) (4.2)
Limits at infinity (1.5)

Homework: [Problem Set 3](#)

Also posted: [Exam 1 Information](#), and lecture notes: [Tangent Lines](#) and [Completing the Square - part 4](#)

Class 6 - Monday, June 15

Lecture: [Tangent Lines](#)
Limits at infinity (1.5)

Homework: [Problem Set 4](#) skip problems #2 c, d, e, f, g, h, #3, and #4

Class 7 - Wednesday, June 17

Lecture: One-sided limits (1.6)
Graphs of exponential and logarithmic functions (4.1, 4.2)

Homework: [Problem Set 4](#) #2 c, d, e, f, g, h, #3, and #4

Class 8 - Thursday, June 18

Lecture: One-sided limits and continuity (1.6)
[Complete analysis of a function](#)
Review for Exam 1

Also posted: [Answers to Problem Sets 1-4](#)

Class 9 - Monday, June 22

Exam 1

Also posted: [Quiz 5 Information](#)

Class 10 - Wednesday, June 24

Lecture: [Graphing factored polynomials](#)
[Logarithms 2](#)
[The derivative](#) (2.1)

Also posted: [Quiz 6 Information](#)

Class 11 - Thursday, June 25

Lecture: [Graphing rational functions](#)
Inverse functions (4.2)

Homework: [Problem Set 5](#)

Also posted: [Quiz 7 Information](#)

Class 12 - Monday, June 29

Lecture: The product rule (2.3)
Increasing and Decreasing Functions; Relative Extrema (3.1)
Differentiation of Logarithmic Functions (4.3)
Antidifferentiation: The indefinite Integral (5.1)

Also posted: [Exam 2 Information](#)

Class 13 - Wednesday, July 1

Lecture: Concavity and Points of Inflection (3.2)
Curve Sketching (3.3)

Class 14 - Thursday, July 2

Lecture: Compound Interest (4.1)
Review for Exam 2

Also posted: [Answers for Problem Set 5](#)

Class 15 - Monday, July 6**Exam 2**

Also posted: [Optimization 2](#)

Class 16 - Wednesday, July 8

Lecture: The chain rule (2.4)
The quotient rule (2.3)
Differentiating exponential functions (4.3)

Also posted: [Differentiation 2](#), [Quiz 9 Information](#)

Class 17 - Thursday, July 9

Lecture: [Definite Integrals](#) (5.3)

Homework: [Problem Set 6](#)

Also posted: [Quiz 10 Information](#)

Class 18 - Monday, July 13

Lecture: [Integration by Substitution](#) (5.2)

Class 19 - Wednesday, July 15

Lecture: Integration by parts (6.1)
Improper Integrals (6.3)

Also posted: [Quiz 11 Information](#), [Exam 3 Information](#), [Review for Exam 3](#)

Class 20 - Thursday, July 18

Lecture: L'Hopital's rule (A.3)
Implicit differentiation (2.6)
Area between curves (5.4)

Class 21 - Monday, July 20

Lecture: Final Review

Class 22 - Wednesday, July 22

Lecture: Final Review

Class 23 - Thursday, July 23**Exam 3**