

Math 104: Precalculus

Homework Assignment Sheet

Fall 2009

<i>Sections and Topics</i>	<i>Problems</i>
<i>Chapter 1: Fundamentals</i>	
1.4 Rectangular Coordinates. Visualizing Data	13, 16, 18, 19, 25
1.5 Graphs and Graphing Utilities	9, 11, 13, 21, 23, 25c, 27c, 29c, 37, 39, 41, 43
1.6 Equations of Lines	5, 7, 11-29odd, 41, 49, 53
1.7 Symmetry and Graphs. Circles	1-21odd, 53-59odd, 60
<i>Chapter 2: Equations and Inequalities</i>	
2.1 Quadratic Equations. Theory and Examples	10, 14, 18, 31, 35, 37, 39, 42, 43-49odd, 51, 56, 64
2.2 Other Types of Equations	4, 6, 9, 31, 47, 57, 19, 29, 70, 71, 74, 89, 90
2.3 Inequalities	6, 7, 10, 20, 27, 38
2.4 More on Inequalities	1, 13, 21, 29, 33, 37, 49, 57, 81, 82
<i>Chapter 3: Functions</i>	
3.1* The Definition of a Function	9-29odd, 33, 37, 45-48all, 49-59odd
3.2* The Graph of a Function	1, 5, 9, 11, 12, 19, 23-39odd, 33, 35
3.3* Shapes of Graphs. Average Rate of Change	1, 2, 4, 9-15odd, 19-23odd, 27, 29, 32, 33, 40-42all
3.4* Techniques of Graphing	1-39 odd
3.5* Methods of Combining Functions. Iteration	1, 2, 7, 11, 13, 18, 19, 21, 27, 29, 31, 49
3.6* Inverse Functions	3, 7, 11, 15, 17, 21, 25, 29, 33, 42, 43, 45, 46
<i>Chapter 4: Polynomial and Rational Functions. Applications to Optimization</i>	
4.4* Setting Up Equations That Define Functions	1, 3, 7, 12, 19, 21, 33, 39, 41, 47
4.5* Maximum and Minimum Problems	1, 5, 7, 11, 13, 17, 21, 27, 29, 32, 33, 43, 45
4.6 Polynomial Functions	3, 11-23odd, 31, 33, 39, 41, 43
4.7 Rational Functions	9, 13, 17, 21, 25, 27, 29, 39, 41, 45
<i>Chapter 5: Exponential and Logarithmic Functions</i>	
5.1 Exponential Functions	3-19odd, 25-31odd, 39, 41, 46
5.2 The Exponential Function $y = e^x$	13, 17, 23, 31, 35-42all, 55, 61, 63
5.3 Logarithmic Functions	1-6all, 9, 11, 17, 21, 23, 29, 31, 45, 49, 51, 33-60all
5.4 Properties of Logarithms	1-9odd, 13, 17, 23, 25, 31-45odd, 51, 55, 57, 61, 63, 64, 71, 72, 73, 77, 81, 83
5.5 Equations and Inequalities with Logs and Exponents	3, 7, 13, 15, 21, 27, 30, 33, 35, 39, 43, 51, 55, 61, 63, 69, 72, 75, 77, 91, 93, 96
5.6 Compound Interest (<i>Optional</i>)	1-25odd
5.7 Exponential Growth and Decay (<i>Optional</i>)	7, 9, 11, 20, 25, 27, 29, 33, 35, 39, 45, 49, 55, 57, 59

Chapter 7: Trigonometric Functions of Real Numbers		
7.5	Graphs of $y = A\sin(Bx-C)$ and $y = A\cos(Bx-c)$	3, 5, 7, 17, 21, 25, 29
7.7	Graphs of Tangent and the Reciprocal Functions	1- 9odd, 21, 23, 29, 35, 37, 43, 45
Chapter 8: Analytical Trigonometry		
8.4	Trigonometric Equations	5-21odd, 39, 41, 45-51odd, 75-81odd
8.5	Inverse Trigonometric Functions	1-19odd, 25-33odd, 35, 37, 63
Chapter 9: Additional Topics in Trigonometry		
9.4*	Parametric Equations	9-17odd
9.5	Introduction to Polar Coordinates	1, 3, 5, 6, 7-23odd, 31, 33, 35, 39, 43, 52
9.6	Curves in Polar Coordinates	13-29odd, 38, 39
Chapter 10: Systems of Equations		
10.2	Gaussian Elimination (<i>Optional</i>)	11-29oss, 39
10.3*	Matrices	13, 19, 23-51eoo, 57, 59, 61
10.4		
10.5	Determinants and Cramer's Rule	3, 5, 15, 17, 27, 32, 33, 35, 36, 37, 49, 52, 57, 59
10.6	Nonlinear Systems of Equations (<i>Optional</i>)	3, 7, 11, 13, 17, 19, 22,, 37, 39, 40
Chapter 11: The Conic Sections		
11.1	The Basic Equations	8, 9, 11, 13, 17, 21, 25, 27, 28, 29, 39, 45
11.2	The Parabola	11, 13, 19, 25, 29, 31, 33, 35, 36, 37, 39, 43, 47
11.4	The Ellipse	1, 7, 19, 23-35odd, 43, 46, 49, 51, 55
11.5	The Hyperbola	9, 15, 21, 27-39odd, 44, 49
11.6	The Focus-Directrix Property of Conics	1-15odd
Chapter 12: Roots of Polynomial Equations		
12.3	The Remainder and the Factor Theorems	5, 11, 13, 21, 23, 31, 37, 47-53odd, 55, 58
12.4	The Fundamental Theorem of Algebra	13, 17, 19, 24, 31, 35, 39, 42, 45, 53
12.5	Rational and Irrational Roots	3, 5, 9, 13, 17, 19, 23, 25, 31, 33, 54, 55, 58
12.6	Conjugate Roots and Descartes' Rule of Signs	5, 13, 17, 19, 21, 25, 31, 37, 41, 43, 45
12.7*	Introduction to Partial Fractions	5- 21eoo, 26
12.8*	More About Partial Fractions	7, 11, 15, 17, 25, 29, 33, 46, 49
Chapter 13: Additional Topics in Algebra		
13.1*	Mathematical Induction	3, 5, 9, 13, 15, 17, 19, 21, 32, 35, 37
13.2	The Binomial Theorem	4, 10, 12, 16, 23, 25, 28, 29, 35, 37, 43, 45, 49
13.3	Introduction to Sequences and Series	11, 13, 17, 18, 21, 23, 29, 39, 43, 45, 53-61odd, 65, 67
13.4	Arithmetic Sequences and Series	2, 3, 7, 9, 11, 13, 16, 19, 21, 23, 25, 27, 34, Project-exercises: 1, 2, 3, 4a,c,e, 5a,b
13.5	Geometric Sequences and Series	1, 3, 9, 11, 13, 14, 19, 21, 27, 29, 31, 22, 35

Note: *The most important sections