

BRONX COMMUNITY COLLEGE * CITY UNIVERSITY OF NEW YORK
DEPARTMENT OF MATHEMATICS AND COMPUTER SCIENCE

SYLLABUS: MTH 05 Basic Concepts of Mathematics I (0 credits, 6 hours)

TEXT: Elementary and Intermediate Algebra: A Unified Approach, 3rd Ed., Baratto, Bergman

Learning Objectives: Proficiency in operations with signed numbers, and in the solution and graphical representation of linear equations. Proficiency in polynomial operations, factoring, and the solution and graphical representation of quadratic functions. Proficiency in operations involving rational exponents and the manipulation of radical expressions.

The Arithmetic of Signed Numbers (6 hours)

0.1	Review of fractions	p.9/ 15,31,37,45,49,57,69,73,77,79,81,91
0.2	Integers	p.20/ 41,43,47
0.3	Adding and Subtracting Signed Numbers	p.32/ 3,13,25,29,41,45,61,63,71,75
0.4	Multiplying and Dividing Signed Numbers	p.48/ 5,7,23,27,35,49,51,57,61,65,67,69,73

Evaluating Algebraic Expressions (6 hours)

0.5	Order of operations	p.60/ 17,19,21,37,43,51,59,65,71
1.2	Evaluating algebraic expressions	p.95/ 5,15,21,25,29,43,49,51,61,67,69

Linear Equations (12 hours)

1.1	Translating algebraic expressions	p.81/ 13,17,25,35,43,49,79
1.3	Combining like terms	p.110/ 11,20,41,55,57,63,65,73,79
2.1	Solving linear equations: Addition property	p.149/ 5,15,33,35,41,43,53,67,69,81,87
2.2	Solving linear equations: Multiplication property	p.164/ 7,19,31,37,39,47,49,53,57,63
2.3	Combining rules	p.181/ 3,11,31,37,41,43,47,51,63,79,81,83
2.4	Literal equations	p.198/ 3,9,13,21,33,37,41,45,46,47,61
2.5	Solving linear inequalities (I)	p.211/ 31,39
2.6	Solving linear inequalities (II)	p.224/ 7,21,29,31

Graphing Linear Equations (10 hours)

3.1	Linear equations in two variables	p.268/ 3,11,21,23,27,29,31
3.2	The Cartesian coordinate system	p.280/ 1-5,11,13,39,41
3.3	The graph of a linear equation	p.303/ 1,5,13,15,21,23,31,35,45
3.4	Slope	p.328/ 1,5,11,19,25,31,33,37
3.5	Point-slope form of a line	p.347/ 1,5,7,9,13,15,23,35,39,51
3.6	Graphing linear inequalities	p.360/ 5,7,9,13,19

Systems of Linear Equations (2 hours)

8.2	Systems of equations in two variables (addition/elimination)	p.817/ 1,3,5,9,27,31,49,51
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Operations with polynomials (8 hours)

4.1	Positive integer exponents	p.388/ 1,3,17,21,49,55,63
4.2	Zero and negative integer exponents [Optional]	p.404/ 1,5,7,25,31,35,57,77,81,99,103
4.3	Definition of polynomials	p.416/ 11,25,31,35
4.4	Addition and subtraction of polynomials	p.426/ 7,13,17,21,25,31,37,57
4.5	Multiplying polynomials	p.441/ 13,23,27,43,45,51,63,71,83
4.6	Division by monomials [Not by binomials]	p.455/ 1-11odd

Factoring polynomials (10 hours)

5.1	Introduction to factoring	p.476/ 1,11,21,27,35,47,63,65
5.2	Difference of squares [No sums or differences of cubes]	p.488/ 13,27,37,41
5.4	Quadratic trinomials	p.513/ 21 – 71 odd
5.6	Solving equations by factoring	p.531/ 1,5,11,17,41,53
5.7	Some word problems involving quadratic equations	p.542/ 1,9,11,15,19,21

Radical expressions and complex numbers (8 hours)

10.1	Introduction to roots and radicals	p.943/ 1,3,5,7,15,37,39,43,51
10.2	Simplifying radical expressions [No variables]	p.957/ 3-19 odd, 43,47,55,57,61,63
10.3	Operations with radical expressions [No rationalizing binomials]	p.972/ 3,11,15,39,45,55,67
10.6	Complex numbers [i notation only, no operations]	p.1009/ 1-9odd

Quadratic equations and some conics (10 hours)

- 11.1 Special methods, completing the square
- 11.2 The quadratic formula
- 11.3 Parabolas [Graph by table]

p.1033/ 3,9,15,33,37,43,51

p.1049/ 5,11,21,25,33,51,57,63,69

p.1070/ 17-22all

AM/Summer 2009