

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

SYLLABUS: MTH 05 Elementary Algebra (0 credits, 6 hours)

TEXT: Lecture Notes for MTH 05, by Andrew McInerney

<http://fsw01.bcc.cuny.edu/mathdepartment/Courses/Math/MTH05/05text0916a.pdf>

PREREQUISITE: MTH 01 or equivalent and RDL 01 if required. CO-REQUISITE: RDL 02 if required

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 equations. Proficiency in operations involving integer exponents and the manipulation of radical expressions.

Preparing for Algebra (12 hours)

I.1 A Review of Fractions

2.1 Signed Numbers

2.2 Graphing signed numbers

2.3 Adding and subtracting signed numbers

2.4 Multiplying and dividing signed numbers

2.5 Exponents and roots with signed numbers

3.1 The order of operations

3.2 Algebraic expressions

3.3 Evaluating algebraic expressions

3.4 Translating algebraic expressions

Linear statements in one variable (12 hours)

4.1 Algebraic statements and solutions

4.2 Solving linear equations

4.3 "Solving" literal equations

4.4 Solving linear inequalities

Linear statements in two variables (12 hours)

5.1 Solving linear equations in two variables

5.2 Slope and the geometry of lines

5.3 Solving linear inequalities in two variables

5.4 Solving systems of linear equations

Polynomials (8 hours)

6.1 Introduction to polynomials

6.2 Adding and subtracting polynomials

6.3 Properties of exponents

6.4 Scientific notation

6.5 Multiplying Polynomials

6.6 Dividing Polynomials (by Monomials only)

Exercises

p.5 1—5

p.6 1—4

p.9 1—5

p.14 1—6

p.16 1—6

p.28 1—15

p.31 1—6

p.32 1—5

p.39 1—8

p.43 1—10

p.46 1—8

p.55 1—15

p.67 1—12, 11—16

p.71 1—5

p.82 1—6

p.94 1—8

p.114 1—11

p.124 1—6

p.135 1—8

p.143 1—8

p.148 1—7

p.155 1—8

p.159 1—12

p.164 1—12

p.167 1—5

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Factoring (10 hours)

7.1	An Introduction to Factoring	
7.2	“Factoring out” the GCF	p.176 1—6
7.3	Differences of squares	p.179 1—14
7.4	Quadratic trinomials I. Monic trinomials	p.184 1—15
7.5	Quadratic trinomials II. The ac-method	p.191 1—10
7.6	Factoring by grouping	p.195 1—6

Radicals expressions (8 hours)

8.1	Quadratic equations	
8.2	Radical expressions	p.209 1—15
8.3	Introduction to complex numbers	p.213 1—6
8.4	Arithmetic of radical expressions	p.218 1—16

Quadratic Functions (10 hours)

9.1	Solving Quadratic Equations I.	p.228 1—11
9.2	Solving quadratic equations II. Completing the square	p.234 1—10
9.3	Solving quadratic equations III. The quadratic formula	p.239 1—10
9.4	Solving quadratic equations IV. Factoring	p.242 1—10
9.5	Summary and applications	p.248 1—19
9.6	Quadratic equation in two variables and parabolas	p.255 1—6

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