

**The College of Staten Island
Department of Mathematics**

COURSE OUTLINE

Mth 030 - Intermediate Algebra

Spring, 2007
DM,SB,JCD

Text: Intermediate Algebra, by J.Kaufmann / K. Schwitters **8th ed.**, Brooks/Cole, Thomson Learning
Calculator (No Graphing or Programmable Calculators)

| Week | Lecture | Section | Topics | Homework Problems |
|-------------|----------------|----------------|---|---|
| I | 1 | 2.1 | Solving Linear Equations and Word Problems | Pg. 51: 17, 19, 21, 23, 35, 39, 41, 43, 51, 53 |
| | 2 | 2.2 2.4 | Equations in Fractional Form and Formulas | Pg. 59: 3, 7, 15, 31 Pg. 77: 17, 19, 21, 25, 27, 37 |
| | 3 | 2.5 | Solving Linear Inequalities | Pg. 86: 1, 3, 5, 9, 11,13, 19, 23, 25, 27, 39, 47, 63 |
| | 4 | 2.7 | Solving Absolute Value Equations | Pg.101: 15, 27, 37, 45, 47, 55 |
| II | 5 | 2.7 | Solving Absolute Value Inequalities | Pg. 101: 3, 5, 9, 13, 23, 43 |
| | 6 | 7.1 | Rectangular Coordinate System Graphing Linear Equations in One Variable | Pg. 346: 29, 30, 31, 32 $y = -5$, $x = 4$ |
| | 7 | 7.1 | Graphing Linear Equations in Two Variables by setting up a table of values | Pg. 346: 13, 15, 19, 21 $y = \frac{1}{2}x + 3$, $y = -\frac{1}{4}x - 1$ (set up table of values) |
| | 8 | 7.1 | Graphing Linear Equations in Two Variables by using Intercept method. Reading Graphs | Pg. 346: 1 – 9 odd, 20, 27,40, 41, 43 (Intercept method) Pg. 347: 38, 39 Handout |
| III | 9 | 7.3 | Graphing Linear Inequalities | Pg. 361: 1, 5, 9, 15, 19 (Table or Intercept Method) |
| | 10 | 7.4 | Slope Formula Slope – Graphing a line given a point and slope | Pg. 371: 21, 23, 25 Pg. 372: 41-45 odd, 55,56,57, 66, 67 |
| | 11 | 7.5 | Equation of a Line - Point Slope Form | Pg. 383: 1 - 5 odd, 9, 13, 19 - 23odd, 26, 27 Write final equations in slope-intercept form. |
| | 12 | 7.5 | Equation of a Line - Slope Intercept Form Equation of a Line - Graphing | Pg. 384: 43, 45, 49 – 61 odd |
| IV | 13 | 7.5 | Parallel and Perpendicular Lines | Pg. 383: 31, 32, 35, 37, 39, 72, 73 Write final equations in slope-intercept form. |
| | 14 | 10.1 | Solving a System of Two Linear Equations by Graphing Additional homework problems | Pg. 493: 1, 2, 13 1) $3x - 2y = 6$ 2) $y = 3x + 1$ $x + 2y = 2$ $2x + y = 6$ |

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| | 15 | 10.1 | Solving a System of Two Linear Equations by Substitution Method | Pg. 494: 11, 13, 15, 16 |
| | 16 | 10.2 | Solving a System of Two Linear Equations using Elimination –by- Addition Method | Pg. 502: 1, 3, 5, 9, 11, 17, 19 |
| V | 17 | | Review | Pg. 104: 1 - 7 odd, 15 - 21 odd, 25, 26, 28, 33, 34, 39, 41, 43, 44, 47 Pg. 388: 1,4, 8 (Use $y = mx + b$ form), 11,12,14, 16, 17, 20, 23, 25, 29,37,39,40 Pg. 542: 1 - 4 , 7 |
| | 18 | | Exam #1 | |
| | 19 | 3.1 | Polynomials - Addition and Subtraction | Pg. 113: 15, 16, 25, 27, 35, 39, 53 |
| | 20 | 3.2 | Monomials - Products and Quotients | Pg. 120: 3 - 9 odd; 21, 29, 37, 39, 49,59, 61 |
| VI | 21 | 3.3 | Multiplying Polynomials | Pg. 127: 1,3,13, 17, 19, 21, 23, 33 - 37 odd, 41,53, 55 |
| | 22 | 3.4 | Factoring - Common Factor | Pg. 135: 25, 27, 29, 31, 35, 39 |
| | 23 | 3.4 | Factoring - Common Factor and Solving Equations | Pg. 135: 65, 67, 73 – 79 odd, 87 |
| | 24 | 3.5 | Factoring the difference of Two Squares and Solving Equations | Pg. 142: 1, 3, 5, 11, 21 - 25 odd, 57, 59, $3x^3 - 27x = 0$ |
| VII | 25 | 3.6 | Factoring Trinomials (a = 1) | Pg. 150: 1 - 9 odd, 15, 17,41, 45 |
| | 26 | 3.6 | Factoring Trinomials (a > 1) Additional homework problems | Pg. 150: 23, 39, 57, 63, 67,77, 79, 89 1) $2x^2 + 7x + 3$, 2) $3x^2 - 8x + 5$ 3) $3y^2 - 7y - 6$, 4) $5a^2 + 18a - 8$ |
| | 27 | 3.7 | Solving Equations and Problem Solving | Pg. 156: 1,5,7, 9,13, 17, 23, 55 |
| | 28 | | Review | Pg. 160: 1,2,5 - 8,10,11,12,15,18,24, 25,30,34-36, 39,40,4 6,47,49,60,68 |
| VIII | 29 | | Exam #2 | |
| | 30 | 4.1 4.5 | Simplifying Rational Expressions Dividing a Polynomial by a Monomial | Pg. 170: 7, 9, 15, 17, 19, 20, 21, 23 Pg. 200: 3, 5, 7, 9, 10 |
| | 31 | 4.2 | Rational Expressions - Multiply and Divide | Pg. 176: 5, 9, 13, 21, 26, 27, 31, 32 |
| | 32 | 4.3 | Rational Expressions - Addition and Subtraction | Pg. 184: 1, 3, 13, 17, 23, 35,49, 53, 61 |

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| IX | 33 | 4.4 | More Rational Expressions - Addition and Subtraction | Pg. 193: 1, 5, 9, 13, 15 |
| | 34 | 4.6 | Fractional Equations | Pg. 208: 3, 5, 9, 11, 15, 19, 25, 29, 37 |
| | 35 | 5.1 | Zero and Negative Integers as Exponents | Pg. 231: 1, 3, 5, 11, 17, 21, 33, 35, 45, 61, 63, 69 |
| | 36 | 5.2 | Roots and Radicals - Simplify | Pg. 242: 1 - 7 odd, 11, 21 - 25odd, 29, 31 45, 55 |
| X | 37 | 5.3 | Radicals - Combining and Simplifying Radicals | Pg. 248: 1 - 9 odd, 10, 23, 27 |
| | 38 | 5.4 | Radicals – Products and Quotients Additional homework problems | Pg. 254: 1, 3, 5, 15, 31, 33, 43 $\frac{1}{\sqrt{2}}, \frac{2}{\sqrt{3}}, \sqrt{\frac{2}{7}}, \frac{\sqrt{35}}{\sqrt{7}}$, and 53, 55 |
| | 39 | 5.5 | Solving Radical Equations | Pg. 260: 1 -15 odd, 33 |
| | 40 | 5.6 | Rational Exponents | Pg. 266: 1, 2, 3, 5, 7, 13, 14, 15, 16, 31, 32 35, 45 - 49 odd |
| XI | 41 | 5.7 | Scientific Notation (Conversion only) | Pg. 271: 1 - 17 odd, 21, 27, 29 |
| | 42 | | Review | Pg. 221: 1,2,3,5,11,12,14 - 19, 23, 24, 26,27,30 Pg. 275: 1,2,4,7,9,10,12,13,14,19,25, 28,30,33,43,46,49,55 , $\frac{3}{\sqrt{2}}, \frac{\sqrt{3}}{\sqrt{8}}$ |
| | 43 | | Exam #3 | |
| | 44 | 6.1 | Complex Numbers (no Division) | Pg. 285: 11,13, 27, 33, 35, 43, 47, 63, 65, 73, 77, 81 |
| XII | 45 | 6.2 | Solving Quadratic Equations and Applications (Pythagorean Theorem) | Pg. 293: 1, 4, 9, 35, 37, 39, 53, 57, 61, 63, 71, 75, 87 |
| | 46 | 6.3 | Solving Quadratic Equations using Completing the Square | Pg. 299: 1, 3, 15, 21, 23, 25, 47 |
| | 47 | 6.4 | Quadratic Formula | Pg. 307: 11, 13, 15, 17, 25, 29, 35 |
| | 48 | 8.1 | Graphing a Parabola by plotting points & symmetry | Pg. 401: 1 - 11 odd, 17, 19 |
| XIII | 49 | 8.1 | Graphing a Parabola using $y = (x - h)^2 + k$ or $y - k = (x - h)^2$ | Pg. 401: 13, 15, 21, 23, 25, 27, 29 (use vertex point, y-intercept and axis of symmetry to graph) |
| | 50 | 8.2 | Graphing the Circle | Pg.408: 23, 25, 27, 31, 35, 37, 39,45, 47 |

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| | 51 | | Review | Pg. 328: 1-5odd,13, 14, 16, 17, 18, 20, 22, 23 Pg. 425: 1, 3, 4, (Find vertex, y-intercept and graph), 10 - 13 (find the center and radius of the circle), 37 ,38 |
| | 52 | | Exam #4 | |
| XIV | 53 | | Review | |
| | 54 | | Review | |
| | 55 | | Review | |
| | 56 | | Review | |