

## Foundations for College Algebra – Math 0989 Content Outline, Assignments, and Links

### I. Review of Real Numbers (6 Days)

- A.) Real Number and its Properties (CORI 1.1)
- *1.1 #2 - #30 Even & #31 - #42 All*
  - [\*Algebra's Power Tools Handout\*](#)
  - Includes Exponents
- B.) Addition, Subtraction, Multiplication, Division of Reals (CORE 1.1)
- *1.1 #1 - #36 M3*
- C.) Order of Operations (CORE 1.2)
- *1.2 #1 - #66 M3 & #75 - #78 All*
  - <https://sites.google.com/site/harlandclub/Home/math/algebra/orderops>
- D.) Prime Numbers, Factorizations, and Fractions (CORE 1.3)
- [\*Fraction Fact Sheet Handout\*](#)
  - *1.3 #1 - #72 M3*
  - *Prime Numbers and Factorizations:*  
<https://sites.google.com/site/harlandclub/Home/math/algebra/arithmetic/prime>
  - *Fractions:*  
<https://sites.google.com/site/harlandclub/Home/math/algebra/arithmetic/fractions>

### II. Linear Equations and Problem Solving (9 Days)

- A.) Solving Linear Equations – One Step (CORE 2.1)
- **2.1 #1 - #51 M3**
  - <https://sites.google.com/site/harlandclub/Home/math/algebra/solve>
- B.) Solving Linear Equations – Multi Step (CORE 2.2)
- **2.2 #1 - #54 M3**
- C.) Clearing Fractions and Decimals (CORE 2.3)
- **2.3 #1 - #31 Odd**
- D.) Solving for a Specific Variable(Formulae) (CORE 2.4)
- **2.4 #1 - #36 M3**

#### EXAM #1

- E.) Problem Solving using Linear Equations (CORE 2.5)
- *George Polya's 4 Steps:*  
<http://web.mnstate.edu/peil/M110/Worksheet/PolyaProblemSolve.pdf>
  - <http://faculty.salisbury.edu/~dccathcart/MathReasoning/Polya.html>
  - **2.5 #1 - #33 M3**
  - *Word Problems:*  
<https://sites.google.com/site/harlandclub/Home/math/algebra/word1var>
  - *Percent:*  
<https://sites.google.com/site/harlandclub/Home/math/algebra/arithmetic/percents>

- *Time-Distance-Rate:*  
<https://sites.google.com/site/harlandclub/Home/math/algebra/word1var/wordprob1varlinear/rtd>

### III. Graphing and Functions (3 Days)

- A.) Rectangular (Cartesian) Coordinate System (CORE 3.1)
- **3.1 #1- #25 Odd**
  - **Graphing:**  
<https://sites.google.com/site/harlandclub/Home/math/algebra/graphline>
- B.) Rate of Change and Slope (CORE 3.3)
- **3.3 #5 - #29 Odd**
  - <https://www.youtube.com/watch?v=bploNzF7cxg>
- C.) Slope-Intercept Form (CORE 3.4)
- **3.4 #1-#19 Odd**
- D.) Introduction to Functions (CORE 5.1)
- **5.1 #1 - #45 M3**
  - **Functions (videos #1-#4):**  
<https://sites.google.com/site/harlandclub/Home/math/algebra/fcn>

### IV. Polynomials, Operations, Exponents

- A.) Polynomials (CORE 5.2)
- **5.2 #1- #60 M3**
  - **Algebraic Expressions:**  
<https://sites.google.com/site/harlandclub/Home/math/algebra/algexpr>

- B.) Adding and Subtracting Polynomials (CORE 5.4)
- **5.4 #1- #36 M3**
- C.) Laws of Exponents (CORE 5.5)
- **5.5 #1- #57 M3**
  - **Exponents:**  
<https://sites.google.com/site/harlandclub/Home/math/algebra/exp>
- D.) Multiplication of Polynomials (CORE 5.6)
- **5.6 #1- #54 M3**
  - Multiplication:  
<https://sites.google.com/site/harlandclub/Home/math/algebra/multipoly>

## Exam #2

- V. Factoring:  
<https://sites.google.com/site/harlandclub/Home/math/algebra/factor>
- A.) The Greatest Common Factor and Factoring by Grouping (CORE 6.1)
- **6.1 #1 - #75 M3**
- B.) Solving Non Linear Equations (CORE 6.2)
- **6.2 #1 - #48 M3**
- C.) Factoring Trinomials,  $a=1$  (CORE 6.3)
- **6.3 #1 - #36 M3**
- D.) Factoring Trinomial,  $a \neq 1$ (CORE 6.4)
- **6.4 #1 - #36 M3**

- E.) Factoring Special Forms (CORE 6.5)
    - **6.5 #9 - #27 Odd & #37 - #79 Odd**
  - F.) Factoring Strategy (CORE 6.6)
    - **6.6 #1 - #36**
- VI. Rational Functions:
- A.) Simplifying Rational Expressions (CORE 7.3)
    - **7.3 #1 - #48 M3**
  - B.) Solving Rational Equations (CORE 7.4)
    - **7.4 #1 - #24 M3**
- VII. Quadratic Functions
- A.) Introduction to Radical Notation (CORE 8.1)
    - **8.1 #1 - #37 Odd**
  - B.) Simplifying Radical Expression (CORE 8.2)
    - **8.2 #1 - #33 M3**
  - C.) Completing the Square (CORE 8.3)
    - **8.3 #37 - #51 Odd**

Exam #3