GPS Math Camp

M-Th, 1:00-3:00pm, RBC Auditorium

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TA Office Hours/Session: 3:15-4:30pm RBC Auditorium and 3201

Course Description: This course is designed to give you the math skills necessary to be successful in the quantitative core courses you will take this year: Microeconomics, Quantitative Methods I, Finance and Accounting, Quantitative Methods II, and International Economics. We cover a lot of material very quickly, progressing from pre-algebra through multivariable calculus in 8 days. It is important that if you don't understand something, you go to TA sessions and office hours.
Prerequisite(s): Admission to GPS (Congratulations!).
Note(s): Your grade for this course is much less important than your understanding of the material.
Credit Hours: N/A
Text(s): None, but please check TED every day for assignments and materials.
Grade Composition:

Homework and Quizzes	50%
Final	50%

Course Policies:

- **General**
  - Please take notes by hand in class.
  - Quizzes and exams are open notes (no computers).
- **Assignments and Tests**
  - Students are expected to work independently. **Offering** and **accepting** solutions from others is an act of **plagiarism**, which is a serious offense and **all involved parties will be penalized according to the Academic Honesty Policy**. Discussion amongst students is encouraged, but the work and answers you show should be your own. When in doubt, direct your questions to the teacher or teaching assistants.
  - **No late assignments will be accepted**.
- **Attendance and Absences**
  - Attendance will not be taken, but you are responsible for turning in a homework assignment at the start of each class.

Course Objectives:
At the completion of this course, students should be familiar with the following topics

1. Day 1 (August 7)
    (a) Order of operations
    (b) Fractions (addition, subtraction, multiplication, division)
    (c) Mathematical notation
2. Day 2 (August 8)
    (a) Basic Algebra
        i. addition, subtraction, multiplication of linear and quadratic expressions
        ii. Solving linear equations
        iii. Graphing linear functions (slope, x and y intercepts)
        iv. Solving quadratic equations (factoring and quadratic formula)
        v. Applied maximization or minimization problems
    (b) Systems of Equations
        i. Graphical method (linear systems)
        ii. Substitution method
        iii. Elimination method
3. Day 3 (August 9)
    (a) Logarithms and Exponents
        i. Laws of exponents
        ii. Laws of logarithms (base 10 and natural log)
        iii. Elimination method
    (b) Simple and compound interest
4. Day 4 (August 10)
    (a) Cost, revenue and profit functions
    (b) Demand and supply functions
        i. Graph and solve for equilibrium price and quantity
        ii. Solve through substitution or elimination
        iii. Graphically show consumer and producer surplus, solve for the values of those surpluses
5. Day 5-6 (August 13-14)
    (a) Basic logical statements
    (b) Basic Calculus
        i. Single variable
            A. First derivative and its interpretations
            B. Second derivative and its interpretations
            C. Elasticity and its interpretation

D. Derivative rules (ponynomial, power, exponential, natural log)
E. Optimization problems using first derivative test
F. Marginal cost, marginal revenue, marginal profit

6. Day 7 (August 15)
   (a) Multi-variable calculus
      i. First partial derivative and its interpretations
      ii. Second partial derivative and its interpretations
      iii. Constrained optimization problems
7. Day 8 (August 16)
   (a) Final Exam