

Econ 300 Review Sheet for First Midterm

In accordance with the main objectives for this course (as listed on the syllabus), the exam will pose questions on:

- terminology and notation
- why economists use math
- calculations typically applied by economists to solve economic problems

We recommend that you prepare for the exam by completing two different types of tasks, described below as A and B.

A.

Work through the concepts listed below and make sure for each term you can recognize and apply:

- the definition in words (in some cases what we have called “intuitive meaning”),
- any corresponding mathematical expression, formula, graph or formal definition,
- at least one example of an economic application

As you do this, you should create a "cheat sheet" on a standard sheet of paper (two-sided). You can put whatever you like on this sheet of paper in whatever form you like, and can use it during the exam.

B.

You should review problem sets 1 and 2 and all of the exercises presented in discussion section and class, as many of the calculation-type problems on the exam are drawn from these exercises. Other exercises presented in the book are good sources of review, and at least one or two exam questions will reflect the other exercises found in the book. You should take the prior exam, which is on the course web site. After you complete the exam (which should take you less than 50 minutes!), you should check your answers with the answers posted on the course web site. Problems you did not get correct are a good indicator of where you need to do additional work.

List of Key Concepts and Terminology

real numbers

integers

intervals

sets

univariate functions

domain of a function

range of a function

validity of a function

independent variables

dependent variables

endogenous variables

exogenous variables

parameters

intercept

slope

formula for a straight line

formula for average rate of change

secant line
parabola
increasing or decreasing functions
strictly increasing or strictly decreasing functions
monotonic functions
inverse of a function
multivariate functions
Cobb-Douglas function
isoquants and indifference curves
extreme values: maxima and minima, global and local
limits
continuity
concavity, strict concavity
convexity, strict convexity
exponential functions
compound interest rates
present value
frequency of compounding
continuous compounding
logarithmic functions
natural logarithmic functions
growth rates
systems of equations
general equilibrium models
partial equilibrium models
differential calculus
comparative statics
difference quotient
derivative
instantaneous rate of change
tangent line
differentiability and the question of the existence of a derivative
differential
marginal cost
marginal utility