Midterm 1 Material (ECON 302)

General guidelines:
- This is a closed notes and closed books exam, and no calculators are allowed.
- The questions are based on notes and homework assignments. Students, who can solve the homework assignment questions and past midterms without looking at the notes, will do very well on the midterm.

Detailed guidelines:
1. **Introduction and preliminaries.**
   a. Growth rates, variables that grow at a constant rate, doubling time.
   b. Prove and be able to use the following approximations:
      i. rule of 70,
      ii. growth of a product,
      iii. growth of a ratio.
   c. Important: Properties of logarithmic scale. Prove that the ln of a constant growing variable is a linear function of time and that the slope of that the ln( ) is approximately equal to the growth rate of the original variable.
   d. Applying the properties of logarithmic scale to graphs.

2. **NIPA.**
   a. Measuring nominal GDP using the expenditure approach and income approach.
   b. Decomposing the nominal GDP into real GDP and price level using the base year approach.

3. **Micro foundations.**
   a. Consumer choice, including Lagrange method.
   b. Producer choice.