

## Homework for Session 1

1. Look at the recent economic indicators from the *Economist* (see course webpage link in the email to which this homework is attached). Among other details, the chart tells us about output growth in various economies for 2009, where national output is measured by the “gross domestic product” (GDP).
  - a. What were 2009 GDP growth rates in richer countries, such as the US, Japan, and the Euro Area?
  - b. What were 2009 GDP growth rates in China and India?
  - c. What were the 2009 GDP growth rates in Eastern European countries such as Estonia, Latvia, Lithuania, and Ukraine?
  - d. Does the US economy ever see growth rates like those in (b) or (c)?
  
2. Consider the “Rule of 72”. This is a handy rule for determining how long it takes something to double in size, given that it grows at a constant rate. The Rule of 72 states that  $N = \frac{72}{g}$ , where  $g$  is the growth rate and  $N$  is the number of years it takes the thing to double. For example, if you have an investment that pays a 4% rate of return (i.e., the investment grows by 4% per year), then it will take  $72/4 = 18$  years to double your money.
  - a. Chinese GDP is often projected to grow at about +9% per year. If this were true, how long would it take China to double its GDP?
  - b. US GDP typically grows at about +2.5% per year. If this is true, how long would it take the US to double its GDP?
  - c. Currently US GDP is about 4 times as large as China’s GDP at market exchange rates. If China’s GDP grows, say, 6% faster per year than US GDP, in how many years would Chinese GDP surpass US GDP?
  
3. Do you think the high current growth rates seen in China and India will continue?