

**Instructions:** Do the reading, then go through the questions, think about them, referring back to the reading when necessary, and write short answers (ranging between 1-2 sentences and couple paragraphs) for each. (If you feel you addressed one question in an answer to another, feel free just to refer to that.) Turn in your answers on the day the reading is due. You may discuss these questions with others but all answers should be written in your words (though you may use occasional quotes).

**To be turned in:**

1. What are your overall thoughts on the introduction (“When am I going to use this?”)? Do you agree with Ellenberg’s views on mathematics?
2. Explain in 1–2 sentences what Ellenberg is referring to by *survivorship bias*? Give another example besides those in the introduction.
3. What are your overall thoughts on Chapter 1?
4. Analyze Mankiw’s block quote *Subsequent history failed to confirm Laffers conjecture that lower tax rates would raise tax revenue. When Reagan cut taxes after he was elected, the result was less tax revenue, not more. Revenue from personal income taxes (per person, adjusted for inflation) fell by 9 percent from 1980 to 1984, even though average income (per person, adjusted for inflation) grew by 4 percent over this period.*
5. Draw a few examples of nonlinear curves that look qualitatively different. Suppose these curves represent the approximate relationship between two quantities (e.g., calorie consumption and obesity). Which relationships will exhibit linear correlation (e.g., a best fit line will go up or go down) and which won’t?

**For reference:** Under the Reagan administration (1981–1988), there were several tax reforms (1981, 1982, 1983, 1984, 1986) for corporate and individual taxes, as well as Social Security and Medicare. These involved both cuts and increases, as well as closing loopholes and consolidated tax brackets. The rough effect was that personal income tax rates went down for most households in 1982 (but up for low income households) and up a bit in 1987.

Source: [http://www.cbo.gov/sites/default/files/cbofiles/attachments/effective\\_tax\\_rates2004.pdf](http://www.cbo.gov/sites/default/files/cbofiles/attachments/effective_tax_rates2004.pdf)

year	individual total	tax revenue per capita	total tax total	revenue per capita
1976	190	880	431	1995
1980	244	1080	517	2288
1984	236	1007	528	2254
1988	279	1146	633	2725
1992	278	1093	640	2518

Table 1: Approximate federal tax revenue in 1980 dollars (totals in billions, per capitas in dollars)

Main source: <http://www.taxpolicycenter.org/statistics/amount-revenue-source>