1. (You may find the material on price indexes on pages 99–101 of Pindyck and Rubinfeld helpful on this problem.) Suppose that consumers in the hypothetical economy of Reedia buy three goods: cell phones, abalone dinners, and "other stuff." The consumption by the average consumer in Reedia bought the indicated quantities of each good at the prices shown in 1975 and 2005.

Good	1975			2005		
	Price	Quantity	Expenditures	Price	Quantity	Expenditures
Cell phones	$2000	0.001	$2	$50	1	$50
Abalone dinners	$10	12	$120	$200	0.01	$2
Other stuff	$100	10	$1,000	$200	12	$2,400
Total			$1,122			$2,452

   a. The Consumer Price Index uses a Laspeyres price index based on the "base-year" market basket. Suppose that the base year is 1975. How much would the 1975 market basket have cost at 2005 prices? How much did it cost in 1975? What would be the 2005 value of the CPI based on this market basket with 1975 = 100?

   b. The GDP consumption deflator uses a Paasche price index based on the "given-year" market basket. How much did the 2005 market basket cost at 2005 prices? How much would it have cost at 1975 prices? What would be the 2005 value of the GDP consumption deflator with 1975 = 100?

   c. Which of the price indexes overstates and which understates inflation and why? How, in principle, does the chain-weighted price index discussed on page 101 of Pindyck and Rubinfeld improve on the simpler Laspeyres and Paasche indexes?

2. (From Mankiw) What components of GDP (consumption, investment, government spending, net exports), if any, would each of the following affect and how? Explain. (Be careful to include all aspects of each transaction.)

   a. A family buys a new refrigerator.

   b. Chase Chevy sells a car from its inventory.

   c. You buy a pizza.

   d. Multnomah County replaces the Sellwood Bridge.

   e. Your professor buys a bottle of South African pinotage at a local shop.

   f. Honda builds onto its factory in Ohio.

3. (From Mankiw) International data show a positive correlation between income per person and health outcomes. Can we be confident which way the causality runs (or that there is any causality at all)? Why might it be important for policymakers to know which way the causality runs?

4. (From Mankiw) From 1950 to 2002, manufacturing employment as a percentage of total employment in the United States fell from 28 percent to 13 percent. At the same time, manufacturing output experienced slightly more rapid growth than the overall economy.

   a. What do these facts say about growth in labor productivity in manufacturing?

   b. In your opinion, should policymakers be concerned about the decline in the share of manufacturing employment? Explain.

5. Suppose that in January 2010 Joan Jones buys an existing house from Alton Dalton for $400,000. Closing costs include a $20,000 commission to UN Realty, a $2,000 title research and transfer fee to SUB Title, and a $4,000 loan origination fee to River Bank. During 2010, Joan pays $1,500 in principal on her mortgage and $15,000 in interest. How (if at all) do the above transactions enter into 2010 GDP?

6. "Growth regressions" often take the form of

$$g_i = \alpha + \beta \ln y_{0,i} + \gamma X_i + u_i,$$

where g_i is country i's growth rate over a period, $\ln y_{0,i}$ is the natural log of the initial level of per-capita income in country i, X_i is a set of other variables that might help determine growth in i (we show only one for simplicity, but there may be many), u_i is a disturbance term to capture factors that are omitted or not measurable, and α, β, and γ are coefficients to be estimated.

   a. If the convergence property of the neoclassical growth model is correct, should β be positive or negative? Why?

   b. In order to have a valid test of the convergence hypothesis, what kinds of variables should be included as X?

   c. In a paper from which I presented results in class, Xavier Sala-i-Martin tested the "robustness" of the effects of dozens of potential variables X variables.[1] Read the results section of this paper and examine his Table 1. For each of the variables that he finds significant, assess the economic (or other) argument (if any) that might explain its effect on growth.

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[1] Sala-i-Martin, Xavier, "I Just Ran Two Million Regressions," *American Economic Review* 87(2): 178-183. URL: http://www.jstor.org/stable/2950909.