CPI Practice Problems

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| ITEM | QUANTITY (2009) | PRICE (2009) | QUANTITY (2010) | PRICE (2009) |
| Bananas | 20 | $1.00 | 15 | $1.00 |
| Cupcakes | 30 | $1.00 | 45 | $0.75 |
| Sushi | 10 | $10.00 | 8 | $11.00 |

1. A Consumer Expenditure Survey in Fancyville shows that people only consume bananas, cupcakes and sushi. The Consumer Expenditure Survey for both 2009 and 2010 are in the table above. The base year is 2009.
   1. What and how much is in the CPI market basket?
   2. What did the CPI market basket cost in 2009? What was the CPI in 2009?
   3. What did the CPI market basket cost in 2010? What was the CPI in 2010?
   4. What was the inflation rate between 2009 and 2010?

Practice questions to work on in groups of 2 or 3

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| ITEMS | QUANTITY (2012) | PRICE (2012) | QUANTITY (2013) | PRICE (2013) |
| Pasta | 10 | $10.00 | 15 | $10.00 |
| Pitas | 20 | $1.00 | 25 | $0.75 |
| Potatoes | 30 | $0.50 | 20 | $1.00 |

1. The table above gives the expenditure of households in the small country of Carbovia. 2012 is the reference base period.
2. What is the cost of the CPI market basket in 2012?
3. What is the CPI market basket in 2013?
4. What is the CPI in 2012?
5. What is the CPI in 2013?
6. Suppose the CPI was 100.0 in 2012, 110.0 in 2013, and 121.0 in 2014, what is the inflation rate in 2013 and 2014?
7. When is the inflation larger? When price levels rise from 105 to 115 or when the price rises from 180 to 195?
8. Assume the CPI last year was 82.3 and this year is 90.9. Based on this information, what is the inflation rate between these years?

What are the limitations (biases) of CPI?

1. New Goods Bias
2. Quality Change Bias
3. Commodity Substitution Bias
4. Outlet Substitution Bias

Problems:

1. When a household buys apples, they discard some of them because they are bruised. About 20% are discarded. Now suppose that new, genetically engineered apples are developed that do not bruise so all of the apples purchased can be eaten. People prefer the new apples, so they switch to buying them. If the price of the new apples is 10% higher than the old apples what happens to the CPI and what should happen to the CPI? What kind of bias is this?
2. When the price a new textbook is $105, Bob decides to buy it at the store closest to him. When the price of textbooks rise to $145, Bob decides to drive further away to buy it for $125. How does Bob’s decision impact CPI? What kind of bias is this?
3. An iPad sold for $600 in 2012 and a new, faster, better iPad sells now for $600. What kind of bias is this? What does it tell us about the accuracy of CPI?
4. Kari use to shop at Macy’s, but now shops at Nordstrom’s Rack. What kind of CPI bias is this?’
5. In 2011, pears cost $1.49/lb. The CPI was 120 in 2011 and 140 in 2012. If there is no change in the real price of a pear in 2012, what is the price of a pound of pears in 2012?
6. In 1970, the CPI was 39 and in 2000 it was 172. A local phone call cost $0.10 in 1970. What is the price of this phone call in 2000?