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Homework #2 (due by 9:00pm on Wednesday, July 12)

*Please submit your answers to this homework through the Assignment link at Blackboard. **No credit will be given for answers submitted in class or emailed to the professor, regardless of the excuse.** This includes unique excuses like my dog ate my homework or aliens showed up in my dorm and accidentally deleted my homework, as well as more traditional excuses like “I lost my Internet”. Please note that all submissions are final, again – regardless of the excuse (which includes “I accidentally hit the submit button”). When you go to Blackboard, you should see that you can save your answers, or “Save and Submit”. Use the Save and Submit button to submit your answers. If you are unfamiliar with Blackboard, then it would be a good idea to visit the class page at Blackboard and check out the homework assignments as they are posted.*

Please note that when Blackboard grades homework answers, more specifically when Blackboard grades answers to any fill-in-the-blank questions – your answer must match exactly with the answer that Blackboard is looking for. Below, you’ll find some instructions on how to properly format these answers. Reading this section is strongly recommended.

Questions 1 and 4-7

Note that on Question #1 and Questions #4-7, you’ll be referred to an online file that has data reported in different tables which you will use to answer those questions. As noted within each of those questions, this file is posted in the **Homework #2 material** folder in "Course Documents" at Blackboard.

In Question #6, you’re asked to calculate a value for real income and then a change in real income between two different areas of the country. Your answer in both parts should be expressed in terms of dollars and rounded to the nearest whole dollar. E.g., twenty dollars and 30 cents would be written as \$20, rather than \$20.30, 20.30 or 20.

In Question #6, when expressing a change in real income, a positive change (increase) can be left “as is”, whereas you need to include a negative sign with any negative change (decrease). E.g., an increase in real income of \$25 should simply be written as “\$25”, but a decrease in real income of \$25 would be expressed as “-\$25”.

If you have any questions on how to express an answer, then be sure to ask before you submit the homework for grading.

Homework #2 Questions

1. We'll be using data from the Energy Information Administration website (<http://www.eia.doe.gov>) on the monthly price and quantity of regular gasoline within the U.S. Assume that the prices and quantities you observe in the tables below represent the equilibrium price (P^*) and equilibrium quantity (Q^*) in this market. We'll also assume that the demand and supply curves in this market have their "typical slope" (i.e. that the demand curve in this market has a negative slope, and the supply curve a positive slope).

Two tables with data are provided below. You can use the links provided below, or go to the Homework #2 material folder in Course Documents at Blackboard and access both tables there.

As you look at each pair of month/year, consider how the price changes between those two months, and then how the quantity changes. These changes suggest that a specific shift must have occurred. I.e., if the price and quantity both increase between a pair of months, then this suggests a specific shift in the demand curve and/or supply curve (as we discussed in class).

Price: U.S. Regular Gasoline Retail Prices (dollars per gallon)

- https://www.eia.gov/dnav/pet/hist/LeafHandler.ashx?n=PET&s=EMM_EPMR_PTE_NUS_DPG&f=M

Quantity: U.S. Regular Gasoline Retail Sales (1000s of gallons per day)

- <https://www.eia.gov/dnav/pet/hist/LeafHandler.ashx?n=PET&s=A123600001&f=M>

Based on the data in the Price and Quantity tables for each pair of months listed below, identify the change in P^* and Q^* that has occurred. Answer the question by identifying the shift or shifts that best explain what would cause the change in P^* and Q^* you identified in each part. E.g., if you discover that both P^* and Q^* increase between Sept 2016 and Oct 2016, and you think this is best explained by an increase in supply, then your answer for part a would be "C".

Change in P^* and Q^* :

- Sept 2016 to Oct 2016
- Aug 2016 to Sept 2016
- July 2016 to Aug 2016
- June 2016 to July 2016
- May 2016 to June 2016

Shift in curve(s):

- Increase in demand
- Decrease in demand
- Increase in supply
- Decrease in supply
- Increase in demand and increase in supply
- Decrease in demand and decrease in supply
- Increase in demand and decrease in supply
- Decrease in demand and increase in supply

2. Assume that Greater Louisville area has a market for retail gasoline that is actually made up of several different (related) markets. Assume that there's a retail gas market in Louisville, as well as a retail gas market in the New Albany, IN, area, in Oldham County and Bullitt County. Assume that most of the people in Greater Louisville are willing and able to move between these four markets on a very regular basis.

We will be analyzing the **retail gasoline market in Louisville** (i.e. we will be trying to predict how the Louisville market is affected by various events). Below, you must determine how each of the five different events affect this market in terms of causing a shift or shifts in the demand and supply for retail gasoline in Louisville. Match each event below with the appropriate shift(s). E.g., if you believe that the increase in consumer income from "part a" causes a decrease in the Supply within the Louisville retail gasoline market, then your answer would be "D".

Events:

- a. Increase in consumer income
- b. Increase in federal gasoline taxes (per unit taxes that are placed on suppliers)
- c. Increased productivity at Louisville gas stations
- d. Improved public transportation, more buses and the introduction of light rail between Louisville and southern Indiana, as well as adjacent counties, at a temporarily reduced cost
- e. Increased construction leads to significantly greater travel times between Louisville and New Albany, which in turn leads to fewer people from Southern Indiana driving over to Louisville

Effect: Shift in Curve(s) within the Louisville gasoline market

- A. Increase (shift right) in Demand for Louisville gasoline
- B. Decrease (shift left) in Demand for Louisville gasoline
- C. Increase (shift right) in Supply of Louisville gasoline
- D. Decrease (shift left) in Supply of Louisville gasoline
- E. Increase (shift right) in Demand for Louisville gas and Increase (shift right) in Supply of Louisville gas
- F. Decrease (shift left) in Demand for Louisville gas and Decrease (shift left) in Supply of Louisville gas
- G. Increase (shift right) in Demand for Louisville gas and Decrease (shift left) in Supply of Louisville gas
- H. Decrease (shift left) in Demand for Louisville gas and Increase (shift right) in Supply of Louisville gas

3. Continue analyzing the market from question #2, the Louisville retail gasoline market, and predict how various events will most likely affect the equilibrium price and quantity of retail gasoline within Louisville. E.g., if you believe that an approaching holiday weekend leads to a decrease in the equilibrium price and quantity of retail gasoline within the Louisville market, then your answer would be “B”.

Events:

- a. There is an approaching holiday weekend
- b. Significant increase in the cost of crude oil
- c. Improved technology with gas pumps
- d. Local government regulations raise the cost of operating at all gas stations in Louisville
- e. Indiana State government temporarily suspends the Indiana state tax on retail gasoline, leading to a dramatic reduction in retail gasoline prices within New Albany, IN.

Effect: ΔP^* and ΔQ^* in the Louisville gas market

- A. Increase in equilibrium price and increase in equilibrium quantity
- B. Decrease in equilibrium price and decrease in equilibrium quantity
- C. Increase in equilibrium price and decrease in equilibrium quantity
- D. Decrease in equilibrium price and increase in equilibrium quantity

4. To answer this question, you must access a file that was created by the Bureau of Labor Statistics (BLS). The file is posted in the Homework #2 material folder in Course Documents at Blackboard. When you access the file, find “**Table 1. Consumer Price Index for All Urban Consumers**” on page 4 of the document (page 5 in Adobe Acrobat).

In Table 1, the (unadjusted index) CPI for All Items in November, 2016 is reported as 241.353, which is a decrease relative to October 2016 and only a moderate increase since November 2015. Use the fourth column on Table 1, the column entitled “Unadjusted percent change to Nov. 2016 from Nov 2015” and out of the various categories listed below, identify the one expenditure category below that shows the biggest percentage decrease in average price (i.e. the category with the largest negative value).

E.g., the percentage change in column 4 for the category “Meats, poultry, fish and eggs” is -6.0. After checking for the percentage change from column 4 for each item on the list below, if you believe that this category had the largest decrease, then your answer would be “a”.

- a. Meats, poultry, fish and eggs
- b. Household energy
- c. Women’s and girls’ apparel
- d. Motor fuel
- e. Medical care services
- f. Personal computers and peripheral equipment

5. Use “**Table 1. Consumer Price Index for All Urban Consumers (CPI-U)**” from the Bureau of Labor Statistics (BLS) file within the Homework #2 material folder under Course Documents at Blackboard (same file that you used to answer Question #4) to answer this question.

Using **Table 1** in this Report, you will note that the second column gives you the “Relative Importance, December 2015” (e.g. the value for item #1, Food & Beverages, is 14.973). These values are the “weights” for each expenditure category in the CPI (as discussed in class). Use this column to rank the following seven expenditure categories below in terms of their importance as an expenditure category within the CPI. The top ranked category (largest weight) should be ranked “1”, second largest ranked “2”, and so forth – all the way to the seventh largest (i.e. smallest) category being ranked as “7”.

Note that there is no partial credit on this question, your answer must be completely correct or it will be considered incorrect.

- _____ *Food & Beverages*
- _____ *Housing*
- _____ *Apparel*
- _____ *Transportation*
- _____ *Medical Care*
- _____ *Recreation*
- _____ *Education & Communication*

6a. Use “**Table 10. Consumer Price Index for All Urban Consumers (CPI-U): Selected areas, all items index**” from the Bureau of Labor Statistics (BLS) file within the Homework #2 material folder under Course Documents at Blackboard to answer both question 6a and 6b below. This table should be on page 40 of the document (page 42 when you read the file using Adobe Acrobat).

On the bottom half of the table, find the sub-heading “selected local areas”. You will use the data listed for the various city areas listed in that section. E.g., the first city-group should be Chicago-Gary-Kenosha, IL-IN-WI. To answer this question, you need to work with the values in the CPI column for October 2016 (e.g. in Chicago, that value is 230.506).

Using the October 2016 CPI (All Items) from the San Francisco-Oakland-San Jose, CA area, the real income for a typical San Francisco resident with \$50,000 in nominal income during

that month/year is _____

Note: express your answer in terms of dollars, not dollars and cents, and round to the nearest whole dollar if necessary.

6b. Use the October 2016 CPI (All Items) for the Atlanta, GA, area and calculate the real income of a typical Atlanta resident with \$50,000 in nominal income during October 2016. Assume this person moves from San Francisco to Atlanta.

This move would **change** the purchasing power of that individual by _____

Note: your answer is the difference between these two values of real income, and you should express your answer in dollars, and round to the nearest whole dollar. If your answer is negative (i.e. decrease), then be sure to include a negative sign in front of your answer (e.g. a decrease of \$5 would be written as -\$5). If the answer is positive (i.e. increase), no positive/plus sign is necessary (e.g. an increase of \$5 would be written as \$5).

7. Use the same table from Question #6 (above), **Table 10**. Consumer Price Index for All Urban Consumers (CPI-U): Selected areas, all items index. Once again, use the city-group listings under the sub-heading “selected local areas” to answer this question.

Assume that you have an individual with a nominal income of \$10,000 during October 2016. Based upon the October 2016 CPI (All Items) reported in the table for these selected local areas, in which area would the real income of this individual be highest?

Note: you should be able to answer this question without doing any math at all.

- a. Chicago-Gary-Kenosha, IL-IN-WI
- b. Los Angeles-Riverside-Orange County, CA
- c. New York-Northern N.J.-Long Island, NY-NJ-CT-PA
- d. Atlanta, GA
- e. Detroit-Ann Arbor-Flint, MI
- f. Houston-Galveston-Brazoria, TX
- g. Miami-Ft Lauderdale, FL
- h. Philadelphia-Wilmington-Atlantic City, PA-NJ-DE-MD
- i. San Francisco-Oakland-San Jose, CA
- j. Seattle-Tacoma-Bremerton, WA

8. The chart below provides you with information about Presidential salaries in specific years and the CPI for each of those years. Use this information to answer the question that follows the table.

US Presidents and their (nominal) salaries			
Year	President	Nominal Salary	CPI (2010=100)
1789	Washington	\$25,000	7.8
1873	Grant	\$50,000	5.5
1909	Taft	\$75,000	4.1
1949	Truman	\$100,000	10.9
1969	Nixon	\$200,000	16.8
2001	Bush	\$400,000	81.0
2011	Obama	\$400,000	100.0

Based on the table above, which President had the greatest real salary?
(note: real salary is the same as real income)

- a. George Washington
- b. Ulysses Grant
- c. Howard Taft
- d. Harry Truman
- e. Richard Nixon
- f. George W. Bush
- g. Barack Obama