Econ 101 Name \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Summer 2013

Answers to Quiz #3

Please write all answers neatly and legibly.

1. Suppose that the market basket underlying the CPI in Elyria is composed of 3 bicycles, 10 pizzas, and 5 gallons of milk. You are given the following information about prices of these items over the three year period 2007-2010.

|  |  |  |  |
| --- | --- | --- | --- |
|  | 2007 | 2008 | 2009 |
| Price of a Bicycle | $100 | $120 | $150 |
| Price of a Pizza | $4 | $5 | $5 |
| Price per gallon of milk | $2 | $2 | $5 |

a. (2 points) Given this information calculate the CPI on a 100 point scale for 2007, 2008, and 2009 using 2007 as the base year. Show all your work in a logical, organized manner. Put your index numbers in the following table after you do your calculations (you must show the steps you took to get the index numbers in order to get full credit on this question).

|  |  |
| --- | --- |
| Year | CPI |
| 2007 |  |
| 2008 |  |
| 2009 |  |

Answer:

1) To answer this question you will first need to calculate the cost of the market basket in each of the three years:

Cost of market basket in 2007 = (3)(100) + (10)(4) + (5)(2) = $350

Cost of market basket in 2008 = (3)(120) + (10)(5) + (5)(2) = $420

Cost of market basket in 2009 = (3)(150) + (10)(5) + (5)(5) = $525

2) To find the CPI index numbers use the following formula:

CPI for year n = [(Cost of market basket in year n)/(Cost of market basket in base year)]\*(scale factor)

CPI for 2007 = [(350)/(350)]\*100 = 100

CPI for 2008 = [(420)/(350)]\*100 = 120

CPI for 2009 = [(525)/(350)]\*100 = 150

Here is the completed table of values:

|  |  |
| --- | --- |
| Year | CPI |
| 2007 | 100 |
| 2008 | 120 |
| 2009 | 150 |

b. (2 point) Calculate the annual rate of inflation between 2007 and 2008, and the annual rate of inflation between 2008-2009. Show any formula and the work you did to get this inflation rate. After computing your answers put them in the following table (you must show the steps you took to get the rate of inflation in order to get full credit on this question).

|  |  |
| --- | --- |
| Period | Rate of Inflation |
| 2007-2008 |  |
| 2008-2009 |  |

Answer:

To find the rate of inflation use the percentage change formula:

Percentage change in a variable = {[(Value of variable in current year) – (Value of variable in previous year)]/(Value of variable in previous year)} \* (100%)

Percentage change in the CPI from 2007-2008 = [(120 – 100)/100] \* 100 = 20%

Percentage change in the CPI from 2008-2009 = [(150 – 120)/120] \* 100 = 25%

Here is the completed table:

|  |  |
| --- | --- |
| Period | Rate of Inflation |
| 2007-2008 | 20% |
| 2008-2009 | 25% |

2. (1 point) (Circle the correct response)Joe runs an engine repair shop and he has recently decided to raise the price for his services. Upon increasing the price of his service he finds that his total revenue from the business increases. Holding everything else constant, this implies that the demand for his services is

a. Inelastic

b. Elastic

3. (1 point) (Circle the correct response) Mary finds that when the price of Coke increases she purchases more Pepsi. Holding everything else constant this implies that Mary’s

a. Cross price elasticity of demand of Coke for Pepsi is a positive number.

b. Income elasticity of demand for Coke is a negative number.

4. Suppose Clint’s income is $100 a day and he spends all of this income on hamburgers (H) or hotdogs (D). If Clint spends all of his income on hamburgers he finds that he can purchase 20 hamburgers and if he spends all of his income on hotdogs he finds that he can purchase twice as many hotdogs as the maximum number of hamburgers he can afford.

a. (2 points)Write an equation in slope intercept form for Clint’s budget line given this information and measuring hamburgers on the vertical axis.

Answer:

From the given information we know that Clint can afford 20 hamburgers and 0 hotdogs or 0 hamburgers and 40 hotdogs. We can use these two points that lie on Clint’s budget line to write an equation for this budget line. The equation will be H = 20 – (1/2)D. The graph in (b) will illustrate this equation.

b. (2 points) Draw a diagram of Clint’s budget line in the space below measuring hamburgers on the vertical axis and hotdogs on the horizontal axis. Label all intercept points, axes, and the budget line in your graph to get full credit for this question.

Answer:

