**Economics 102**

**Summer 2014**

**Homework #1**

**Due 6/26/14**

**Directions:** The homework will be collected in a box **before** the lecture. Please place your name, TA name and section number on top of the homework (legibly). Make sure you write your name as it appears on your ID so that you can receive the correct grade. Please remember the section number for the section **you are registered,** because you will need that number when you submit exams and homework. Late homework will not be accepted so make plans ahead of time. **Please show your work.** Good luck!

Please remember to

* Staple your homework before submitting it.
* Do work that is at a professional level: you are creating your “brand” when you submit this homework!
* Not submit messy, illegible, sloppy work.

1. This set of questions will help you review some basic algebra, the slope-intercept form, finding a solution given two linear equations, and finding a new equation based upon an initial equation that has undergone a change. Each question below is independent of the other questions in the set.

a. You are given two pairs of coordinates that lie on a linear relationship. The two pairs of coordinates are (x, y) = (20, 5) and (15, -2). You are asked to find the equation for the line that these two points lie on.

b. You are given two pairs of coordinates that lie on a linear relationship. The two pairs of coordinates are (x, y) = (10, 15) and (2, 5). You are asked to find the equation for the line that these two points lie on.

c. You are given two equations:

Equation 1: y = 10 + 6x

Equation 2: y = 26 – 2x

Find the (x, y) solution that represents the intersection of these two lines.

d. You are given two equations:

Equation 1: y = 10 + 2x

Equation 2: y = 26 – 2x

But, you are also told that equation 1 has changed and now the y value is 10 units bigger at every x value than it was initially.

i. Write the equation that represents the new Equation1’.

ii. Given the new Equation 1’ and Equation 2, find the (x,y) solution that represents the intersection of these two lines.

2. The price of money is called the interest rate. Suppose that when the interest rate is 2%, the demand for money is $1000 and when the interest rate is 7% the demand for money is $500. Assume the relationship between the quantity of money demanded (Q) and the interest rate (r) is linear.

a. Draw a graph representing the above information. In your graph measure Q on the horizontal axis and r on the vertical axis.

b. Write an equation for this relationship in slope-intercept form.

3. Morey’s wealth on December 31, 2010 was equal to $200,000; his wealth on December 31, 2011 was equal to $250,000; and his wealth on December 31, 2012 was $300,000. Use this information to answer this next set of questions. For this set of questions assume there was no inflation during this three year period of time.

a. Using the given information calculate the percentage change in Morey’s wealth for each year. Place your answers in the following table. But, make sure you show how you got your answers for the table in the homework answers you provide.

|  |  |  |
| --- | --- | --- |
| Date | Wealth on that date | % change in wealth from previous year |
| 12/31/2010 | $200,000 | --- |
| 12/31/2011 | $250,000 |  |
| 12/31/2012 | $300,000 |  |

b. Given that Morey’s wealth increases by $50,000 in both 2011 and 2012, does that mean that the percentage change in his wealth is the same for each of these years? Explain your answer.

4. The following table provides data on the amount of labor Pablo and Lou need in order to produce watches (W) and blankets (B). Assume that both Pablo and Lou have linear production possibility frontiers and that the production of watches and blankets requires only labor as an input.

|  |  |  |
| --- | --- | --- |
|  | Labor Needed to Produce One Watch | Labor Needed to Produce One Blanket |
| Pablo | 3 Hours of Labor | 5 Hour of Labor |
| Lou | 2 Hours of Labor | 3 Hours of Labor |

a. Assume that Pablo and Lou each have 60 hours of labor they can devote to watch and blanket production. Fill in the following statements given this information. Assume both Pablo and Lou produce at points on their PPFs.

i. When Pablo produces 10 blankets, his watch production must equal \_\_\_\_\_\_\_\_\_.

ii. When Pablo produces 6 blankets, his watch production must equal \_\_\_\_\_\_\_\_\_.

iii. When Lou produces 8 blankets, his watch production must equal \_\_\_\_\_\_\_\_\_.

iv. When Lou produces 16 blankets, his watch production must equal \_\_\_\_\_\_\_\_\_.

b. For Pablo, the opportunity cost of producing 2 blankets is equal to \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

c. For Lou, the opportunity cost of producing 4 blankets is equal to \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

d. Pablo has the comparative advantage in the production of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ and Lou has the comparative advantage in the production of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. Explain your answer.

e. Construct Pablo and Lou’s joint PPF measuring watches (W) on the vertical axis and blankets (B) on the horizontal axis.

f. The acceptable range of trading prices for 10 watches is \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

