Problem Sets 2

1. Based on the standard definition, indicate which of the following transactions will be included in (that is, directly increase) the GDP of the United States in 2018.

1) Chocolate Express, a Swiss chocolate company, produces a chocolate bar at a plant in Illinois on December 9, 2018. An elementary school student buys the chocolate bar on December 24.
2) Athleticus, a U.S. shoe company, produces a pair of sneakers at a plant in Vietnam on March 27, 2018. Athleticus imports the pair of sneakers into the United States on May 18, 2018.
3) Treetopplers, a U.S. lumber company, produces wood at a plant in Oregon on September 25, 2018. It sells the wood to Buildit and Partners, a developer, for use in the production of a new house that will be built in the United States in 2018. (Note: Focus exclusively on whether production of the wood increases GDP directly, and ignore the effect of production of the new house on GDP.)
4) Tasty's, a U.S. fast-food company, produces a hamburger at one of its many St. Louis locations on January 14, 2018. It sells the hamburger to a customer that same day.
5) An accountant starts a client's 2018 tax return on April 14, 2019, finishing it just before midnight on April 15, 2019.

2. The following table shows the unit prices and quantities of three different goods produced in Biwei's economy at different periods.

Products	T=1		T=2		T=3	
	Price	Quantity	Price	Quantity	Price	Quantity
Apple	$ 10	5	$ 12	5	$ 10	6
Banana	$ 5	10	$ 6	10	$ 6	10
Cherry	$ 25	2	$ 30	2	$ 30	2
Nominal Income						
Real Income						

1) Calculate Biwei's nominal income at T= 1, 2, 3 and fill in the table.
2) Calculate Biwei's the real income at T=1, 2, 3 with base year T=1 and fill in the table.
3) Using GDP deflator method, calculate the inflation rate from T=1 to 2, and from T=2 to 3.
4) Using CPI method with base year T=1, calculate the inflation rates from T=1 to 2, and T=2 to 3.
5) Based on quantity theory of money, suppose transaction velocity equals one, what are the money stock values at T=1, 2, 3, respectively?
6) From T=1 to T=2, according to the quantity theory, what causes P to rise? [Hint: V, Y is constant.]
7) From T=2 to T=3, according to the quantity theory, what causes P to fall? [Hint: V, M is constant.]
8) If transaction velocity doubles at T=4, how would the prices change if the money stock and output remain constant?

3. Identify categories of aggregate expenditures: Lorenzo and Neha Stewart live in Swarthmore, PA. Neha's father, Sam, lives in Sweden. For each of the following transactions that occur in their lives, identify whether it is included in the calculation of U.S. GDP as part of consumption (C), investment (I), government purchases (G), exports (X), or imports (M).

1) Neha's father in Sweden orders a bottle of Vermont maple syrup from the producer's website.
2) Neha gets a new video camera made in the United States.
3) Lorenzo's employer upgrades all of its computer systems using U.S.-made parts.
4) Neha buys a new BMW, which was assembled in Germany.
5) The Federal Aviation Administration expands the runways at Philadelphia International Airport, which is just a few miles from Lorenzo and Neha's house.

4. Although GDP is a reasonably good measure of a nation's output, it does not necessarily include all transactions and production for that nation. Which of the following scenarios are either not accounted for or measured inaccurately by either the income or the expenditure methods of calculating GDP for the United States? *Check all that apply.*

1) The costs of overfishing and other overly intensive uses of resources
2) Expenditures on federal highways
3) The variety of goods available to consumers
4) The value produced by doing your own laundry

5. When a U.S. company purchases and imports wood from Brazil to use to build new houses within the United States, this purchase increases which component of GDP? At the same time, which component of GDP declines by the same amount? Therefore, the purchase of wood from Brazil causes what direction of change in US GDP?