ECO 120: Global Macroeconomics   Name: _____
Week 4 Homework: Measuring Production, Employment, and Prices

Suppose an economy produces only vegetarian burgers and vegetarian chili, and the prices and quantities that prevailed for 2023 and 2024 are given in the following table.

	2023		2024	
	Price	**Quantity**	**Price**	**Quantity**
Veggie Burgers	$15	10	$16	12
Veggie Chili	$18	17	$20	18

1. Compute nominal GDP for 2023 and 2024.

2. Use 2023 as a base year and compute real GDP for 2023 and 2024.

3. Compute the price level with the GDP deflator for 2023 and 2024, using 2023 as a base year.

4. Define the **inflation rate**. Compute the inflation rate from 2023 and 2024 using your answers above.

5. Suppose in 2023 you earned a nominal wage of $15 per hour and in 2024 you earned $16 per hour. Use these nominal wages and the GDP deflator measure of the price level to compute your real wage for each year. In terms of purchasing power of wages, do you think you earned more in 2023 or 2024? Explain.

6. With recent improvements in technological automation, automobile production in manufacturing facilities have become increasingly automated. As a result, there has been a permanent reduction in demand for automobile manufacturing employment in the United States. What type of unemployment does this cause? Explain.

7. Suppose more college students are graduating than usual, leading new graduates to start looking for work. What type of unemployment may this cause? Explain.

8. Suppose sales for goods and services are down across the economy, and businesses respond by reducing production and laying off employees. What type of unemployment is this? Explain.

9. Suppose the country of LoompaLand has a civilian working-age population of 10,000 Oompa Loompas who are characterized as follows:

- 5,500 are employed at Willy Wanka's Chocolate Factory
- 1,800 are employed as chocolate industry spies by Sluggworth's Chocolates
- 900 are employed as vocalists in the local music industry
- 500 Oompa Loompas are looking for jobs, but are not yet employed
- 600 Oompa Loompas are not employed, but are not looking for jobs because they became frustrated and gave up trying to find a job
- 700 Oompa Loompas are retired, not interested in working.

(a) Define the **labor force participation rate**. Compute the labor force participation rate for LoompaLand.

(b) Define the **unemployment rate**. Compute the unemployment rate for LoompaLand.

(c) Define **discouraged worker**. How many discouraged workers are there in LoompaLand?

10. Suppose that the Bureau of Labor Statistics was failing to identify many new entrants to the labor market, who are looking for work but not yet finding a job. If they fixed this error, what would be the impact on the estimate for the unemployment rate and the labor force participation rate? Explain.