Introductory Macroeconomics
Homework 2: Unemployment & Inflation

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1. T/F. Frictional unemployment is usually short-term and reflects people moving between jobs.

2. T/F. The unemployment rate and the labor force participation rate can both increase at the same time.

3. T/F. Unexpected inflation benefits borrowers and hurts lenders.

4. T/F. Prices fall when the inflation rate falls.

5. T/F. Inflation can distort price signals and make economic decision making harder.

6. Revisit exercise #6 of Homework 1.

    (a) If 2021 is the base year, calculate the GDP deflator in 2021, 2022, and 2023. Calculate the inflation rate between those years.

    (b) Repeat (a) if 2022 is the base year.

7. Find the prices for chicken, eggs, and milk.

	Chicken	Eggs	Milk	CPI	Inflation
2021					$\times$
2022					
2023					
2024					
2025					
	Dollars per lb.	Dollars per doz.	Dollars per 1/2 gal.		

    (a) Complete the table with the prices of chicken, eggs, and milk of January of each year.

    (b) The typical bundle is 4 lbs. of chicken, 1 doz. of eggs, and 1 gal. of milk.[1] Calculate the CPI for 2021-2025. Consider 2021 to be the base period.

    (c) Calculate the annual inflation rate.

8. In November of 2024 the adult population in the US was 269.463, the number of employed people was 161.183, and the number of unemployed people was 7.121. These numbers are in millions. Calculate the unemployment rate and the labor force participation rate.

9. In an imaginary country there are 100 employed people and the unemployment rate is 20%. Find the number of unemployed people.

10. Consider the following data from an imaginary economy.

    (a) Calculate the unemployment rate and the labor force participation rate for men.

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[1]Careful: The price of milk is per half a gallon.

	Men	Women	Total
Employed	150	100	
Unemployed	25	60	
Not in LF	50	85	
Adult Population	225	245	

(b) Repeat for women.

(c) The overall unemployment and labor force participation rates always lie in between those of men and women. Intuitively explain why.

(d) Calculate the overall unemployment and labor force participation rates.

11-15 In recent years CPI categories such as housing and food and beverages have increased faster than the average. Download data on the CPI since 2011.

(a) What are examples of goods included under the categories housing and food and beverages? You can check this site.

(b) Focus on the general CPI. Rescale the CPI so that January 2019 equals 100. To do so, divide the CPI in each month by the CPI value in January of 2019.

(c) Repeat for the food and beverages category.

(d) Repeat for the housing category.

(e) Starting in 2019, plot the three indexes on the same plot. Have the categories increased their price more than the average CPI?

Your answer should include a graph with three lines over time. Make sure each line is correctly labeled. Please adjust the vertical axis as needed to make the point clear.