Problem 1. Define the following terms:

(a) cyclical unemployment

(b) natural unemployment

(c) frictional unemployment

(d) structural unemployment

(e) minimum wage unemployment

(f) efficiency wage unemployment

Problem 2. Consider a country with the following statistics:

Population (Pop)	$250,000$	(consider this the civilian population)
Employed (E)	$182,000$	
Unemployed (U)	$18,000$.	

What is the labor force participation rate (LFPR)?

Problem 3. Consider a country with the following statistics:

Population (Pop)	$250,000$	(consider this the civilian population)
Employed	$182,000$	
Unemployed	$18,000$.	

What is the unemployment rate? What is the employment-population ratio?

Problem 4. Consider a country with the following statistics:

Population (Pop)	$250,000$	(consider this the civilian population)
Employed (E)	$182,000$	
Unemployed (U)	$18,000$.	

If the natural rate of unemployment was 5% and the frictional rate of unemployment was 2%, then what is the cyclical rate of unemployment?

Problem 5. Consider a country with the following statistics:

Population (Pop)	$250,000$	(consider this the civilian population)
Employed (E)	$182,000$	
Unemployed (U)	$18,000$.	

If the natural rate of unemployment was 5% and the frictional rate of unemployment was 2%, then what is the structural rate of unemployment?

Problem 6. Consider a country with the following statistics:

Population (Pop)	$250,000$	(consider this the civilian population)
Employed (E)	$182,000$	
Unemployed (U)	$18,000$.	

If the natural rate of unemployment was 5% and the country produced the potential level of GDP, then what will be the number of employed workers?

Problem 7. Consider a country with the following statistics:

Population (Pop)	$250,000$	(consider this the civilian population)
Employed (E)	$182,000$	
Unemployed (U)	$18,000$.	

If the natural rate of unemployment is 5%, cyclical unemployment is 4%, and each worker could produce 3 units of output, then what is potential GDP?

Problem 8. The size of the labor force is 100,000 and the number of people registered as unemployed equals 10,000. There are currently 1,000 discouraged workers. What is the "true" unemployment rate, i.e. the one that includes the discouraged workers?

Problem 9. Consider the following unemployment statistics:

$$u_f = 3\% \quad u_s = 2\% \quad u_m = 0\% \quad u_e = 0\% \quad u = 4\%$$

How does potential GDP compare to actual real GDP?

Problem 10. In a country, the overall rate of unemployment is 11% and the natural rate of unemployment is 5%. Assume that the Okun's coefficient is $\alpha = 2$. Find the percentage GDP gap in this country.