1. Suppose that demand curve for workers in fast-food restaurants in New York City is given by the equation:

$$L^D = 100 - \frac{W}{P},$$

where $L^D$ is the number of workers (in thousands) that fast-food restaurants want to hire when the (hourly) real wage is $W/P$. Suppose that the supply curve of workers is given by the equation:

$$L^S = 70 + 2 \frac{W}{P},$$

where $L^S$ is the number of workers (in thousands) who want to work at fast-food restaurants when the (hourly) real wage is $W/P$.

(a) Find the market-clearing value of the real wage (i.e., the value of the real wage for which the demand for workers is exactly equal to the supply of workers). Draw a supply-and-demand diagram like the one on p. 24 of Lecture Slides #4 to illustrate your answer.

(b) Suppose that the government imposes a minimum wage of $12 per hour; that is, the nominal wage ($W$) cannot be less than 12. If the price level $P = 1$, how many workers will find employment in the fast-food industry? What real wage will they earn? What is the excess supply of labor (i.e., how many workers, if any, would like to work in the fast-food industry but are unable to find employment)? Illustrate your answer with a supply-and-demand diagram.

(c) Now suppose the price level increases 30%, from 1 to 1.3, but the minimum (nominal) wage remains fixed at 12. In this case, how many workers will find employment in the fast-food industry? What nominal wage will they earn? What real wage will they earn? What, if any, is the excess supply of labor? Illustrate your answer with a supply-and-demand diagram.

(d) On the course web site (http://www.econ.yale.edu/smith/econ116a), you will find a reading from The Economist on the minimum wage. Based on your reading,
describe in your own words two reasons (in addition to lowering employment) why minimum wage laws might not help to relieve poverty.

2. (a) In the theory of aggregate supply developed in Lecture Slides #5, suppose that the markup $\beta = 0.1$, the constant $a = 2$, and the “other factors” $z = 0$. Calculate the natural rate of unemployment. Calculate the natural level of employment (assuming that the size of the labor force is $N$).

(b) Suppose that the government increases the generosity of unemployment insurance (UI) benefits. By reducing the disadvantages of unemployment, more generous UI increases workers’ bargaining power when negotiating wages with firms. To capture this increase in bargaining power, suppose that $z$ increases from 0 to 0.05. How does this increase affect the natural rate of unemployment? The natural level of employment?

(c) In the long run, how does more generous UI affect the real wage? Explain using the wage-setting and price-setting relations developed in Lecture Slides #5.

(d) How does more generous UI affect the long-run aggregate supply curve? Explain clearly. Illustrate your answer using an AD-AS diagram.

3. Lecture Slides #6 examines the short-run effects of an increase in the world price of oil on aggregate supply. Suppose that the government responds to this supply shock by increasing the money supply (thereby increasing aggregate demand). In the short run (i.e., holding the expected price level constant), how do these simultaneous changes in aggregate supply and aggregate demand affect the price level? The level of output (GDP)? The unemployment rate? The real wage? The nominal wage? In each case, determine whether the direction of the change is unambiguous and, if so, whether the variable in question increases, decreases, or remains the same. (You may assume that, before the changes to aggregate supply and aggregate demand, the economy is in a position of long-run equilibrium.) Support your answers using convincing arguments. Where it is appropriate, illustrate your answers using an AD-AS diagram.

4. Read John Maynard Keynes’ famous article “Economic Possibilities for our Grandchildren” (available on the course web site). Explain (briefly) in your own words why Keynes thinks economists should be like dentists.