1. a) The market clearing wage is $\frac{W}{P}$ such that $L^D = L^S$ so

$$100 - \frac{W}{P} = 70 + 2 \frac{W}{P}$$

$$\Rightarrow 30 = 3 \frac{W}{P}$$

$$\Rightarrow \frac{W}{P} = 10$$

b) With the minimum wage now $W = 12$ and $P = 1$ the market is not able to clear since the minimum real is $\frac{W}{P} = 12$ which is above the market clearing real wage. Therefore workers will earn a real wage of $\frac{W}{P} = 12$ and $L^D(12) = 100 - 12 = 88$, so 88 thousand workers will find employment. But at $\frac{W}{P} = 12$ the supply of labor is $L^S(12) = 70 + (2 \times 12) = 94$, so 94 thousand people would like to work. Therefore the excess supply of labor is $L^S(12) - L^D(12) = 94 - 88 = 6$, so 6 thousand workers would like to work in the fast food industry but are unable to find jobs.
c) If the price level increases 30% from 1 to 1.3, and the minimum nominal wage is still $W = 12$, then the minimum real wage is $\frac{W}{P} = \frac{12}{1.3} \approx 9.23$. Notice this is below the market clearing real wage of 10 so the market will still be able to clear despite the minimum wage law. The market clearing nominal wage solves $\frac{W}{1.3} = 10$, so the market clearing nominal wage is $W = 13$. Therefore $L^D(10) = 100 - 10 = 90$, so 90 thousand workers find work at a nominal wage of 13 and a real wage 10. And since $L^S(10) = 70 + (2 \times 10) = 90$ there is no excess supply. The graph is therefore the same as for part a.

d) Describe two reasons given in the article why raising the minimum wage might not decrease poverty (other than lowering employment). For example, many minimum wage workers are not poor, higher min wage induces kids to drop out of school, many poor people would not benefit since they don’t work, and a lot of the cost of the higher minimum wage would be shifted to the poor.

2. (a) From the aggregate supply theory developed in class, we know that the natural rate of unemployment is defined by

$$u_n = \frac{1}{a} \left( \frac{\beta}{1 + \beta} + z \right)$$  \hspace{1cm} (1)

Replacing $\beta = 0.1$, $a = 2$ and $z = 0$ in this formula, we get that $u_n = 0.0454$ or 4.54%. Finally, employment $L$ is defined by $L = (1 - u)N$, where $u$ is the unemployment rate and $N$ is the labor force. The natural level of employment $L_n$ is computed using the natural rate of unemployment, therefore,

$$L_n = (1 - u_n)N = (1 - 0.0454)N = 0.954N$$

(b) Here we will capture the increase in workers’ bargaining power, implied by an increase in unemployment insurance, through an increase in $z$ to 0.05.
Using this new value for $z$ in equation (1), implies that the new value of the natural unemployment rate is 7.045%. Using this rate in the definition of employment implies that the new natural employment level is 0.929N. Therefore, the increase in the unemployment benefits increased the long run unemployment rate and decreased the employment level.

(c) The price setting relation tells that

$$\frac{w}{P} = \frac{1}{1 + \beta}$$

Then, according to this equation, real wages only depend on $\beta$ and not on the “other factors” captured in $z$. Therefore, more generous UI will not affect real wages in the long run.

Notice that this is consistent with the result obtained in part (a): the long run wage setting equation tells us that

$$\frac{w}{P} = 1 - au + z$$

therefore, to maintain the real wage constant, if $z$ increases, $u$ should increase too, to offset the increase in $z$.

(d) As we are working under the assumption that $Y = L$, the long run aggregate supply curve is defined by

$$Y_n = L_n = (1 - u_n)N$$

(2)

We saw in part (b) that more generous UI will make the unemployment rate to increase, therefore, from equation (2), we can conclude that an increase in the UI will decrease the natural level of output, $Y_n$, shifting the long run aggregate supply curve to the left.

Let LRAS be the original long run aggregate supply curve (that is, for $z = 0$) and LRAS’ be the new curve (that is, for $z = 0.05$). Then, graphically:

3. We have to analyze the short run (fixed expected price level) impact of a simultaneous increase in aggregate demand and shift in aggregate supply. Let’s analyze each of this effects by their own first.

An increase in AD, will imply an increase both in the price level and in output:
Notice that we are assuming that we started from a LR equilibrium, that is why the intersection of the original AD, the LRAS and the SRAS occurs at \((Y_n, p^o)\).

Now, if we only consider a decrease in AS caused by the oil price shock, we will have that the price level increases but output decreases:

In this question we are asked to consider both these shifts simultaneously. Given that both changes, by themselves, imply an increase in the price level, when both happen at the same time, the price level will rise too. Now, the effects on output of these changes are opposite: the increase in AD will increase output, but the decrease in AS will decrease output. Therefore, without knowing the magnitude of the changes in AS and AD, we can’t say whether output increased or decreased. Graphically, we can have any of the following 3 situations:

Figure 1: Output increases
Figure 2: Output remains the same
Figure 3: Output decreases
Also, as the change in output is ambiguous, the change in the unemployment rate will be ambiguous too (remember that \( u = 1 - Y/N \)).

Finally, as the real wage is defined by the price setting equation as \( 1/(1+\beta) \), the increase in \( \beta \) will imply a decrease in the real wage. On the other hand, the change in nominal wage is ambiguous. We can see this from both equations defining the AS:

\[
\text{price setting: } w = \frac{p}{1+\beta}
\]

here \( p \) increases, but \( \beta \) increases too, so the final effect is ambiguous.

\[
\text{wage setting: } w = p^e(1 - au + z)
\]

as the effect on \( u \) is ambiguous (and \( p^e \), \( a \) and \( z \) remain fixed), the effect on \( w \) is ambiguous too.

4. Why does Keynes’ think economists should be like dentists? Keynes believes that in the future the economic problem will be solved in the sense that it will no longer be our main concern. In the past, economics (survival and subsistence) has been man’s primary concern, but given the rate of technological progress and capital accumulation that Keynes was observing he predicts it soon will not be. So economists in the future should play a smaller more specialized role, thus the analogy to dentistry.

Just write anything that shows you read and understood the article.