I. (50%) Fill in the following blanks.

1. Suppose you can get grade A with a probability 0.2, grade C with a probability 0.6, or grade F with a probability 0.2 in the Econ101 class. Your current wealth is NT$ 400. If you get an "A," the teacher will pay you NT$ 500. If you get a "C," you do not gain or lose anything. However, if you get an "F," you need to pay the teacher NT$ 300. Suppose that your utility function defined over wealth is $U(w) = \sqrt{w}$. Then, the expected utility of your wealth equals ____(1)____, and your certainty equivalent level of wealth is ____(2)____.

2. A utility-maximizing consumer's preferences for goods x and y can be represented by the utility function of $U(x, y) = x^{1/2} + y$. Suppose the price of y is 1, and the price of x is denoted by $p > 0$. If the consumer's income is m with $m \ge \dfrac{1}{4p}$. Then, this consumer's Marshallian demand functions of the two goods are ____(3)____, and this consumer's Hicksian demand functions of the two goods with his/her reservation utility level $u > 0$ are ____(4)____. In contrast, suppose $m < \dfrac{1}{4p}$, then this consumer's Marshallian demand functions of the two goods are ____(5)____.

3. A monopoly firm sells its patent-protected product in both the domestic and foreign markets. The domestic and foreign demand functions are $q_d = 120 - 2p_d$ and $q_f = 60 - p_f$, respectively, where all prices are measured in domestic dollars. The firm's marginal cost is $MC = 10$ in both countries. Initially, the domestic and foreign governments prevent resale of this product (i.e. the monopoly firm can price discriminate). What are the quantities of this product sold in the domestic and foreign countries? $(q_d, q_f) = $ ____(6)____.
Now assume that the domestic and foreign governments permit resale of this product (i.e. the monopoly firm can no longer price discriminate), and costs of transportation and transaction are negligible. What are the quantities of this product sold in the domestic and foreign countries? $(q_d, q_f) = $ ____(7)____.

4. A firm produces output q using capital and labor inputs based on the production function $q = f(K, L) = 4K + 2L$. Capital and labor are both supplied in perfectly elastic input markets at prices of $r = 4$ and $w = 4$, respectively. Find the factor demands for capital and labor as functions of output, $(K(q), L(q)) = $ ____(8)____. Also, express the firm's total cost as a function of q, $TC(q) = $ ____(9)____.

5. Consider a game with players 1 and 2. Player 1 can choose among A, B, and C, and player 2 can choose among L, M, and R. Their associated payoffs are stated in the following table. There exists a pure-strategy or mixed-strategy Nash equilibrium. It is ____(10)____.

	L	M	R
A	(0, 1)	(0, 0)	(10, 0)
B	(2, 1)	(1, 2)	(0, 1)
C	(1, 2)	(2, 1)	(0, 1)

II. (50%)Macroeconomics

Short-essay questions: All questions may be answered in EITHER English OR Chinese. Please note that you are allowed to make necessary assumptions for conducting the analysis.

1. (20%) If a country imposes a tariff on imports from aboard, how does this action change the long-run real exchange rate between home and foreign currencies? How is the long-run nominal exchange rate affected?

2. (30%) New Federal Reserve Chairwoman Janet Yellen said on February 11, 2014 that markets should expect the central bank to continue to follow the low-interest-rate path laid out by her predecessor Ben Bernanke. Chairwoman also said that the central bank would taper (decrease) the pace of its asset purchases at future meetings if the economy continued to improve as expected, although the pullback was not on a preset course. The Fed's decisions about the pace of tapering are data dependent.

    (1) (5%) Please explain the statement that the Fed's decisions about the pace of tapering are data dependent. What data is considered in this statement?

    (2) (10%) According to the policy statement described by Chairwoman Janet Yellen, please graphically analyze the impact of the policy statement on the equilibrium interest rate, exchange rate, general price level, net export and GDP of US economy.

    (3) (8%)According to the policy statement described by Chairwoman Janet Yellen , what are the expected time paths of the equilibrium interest rate, exchange rate, general price level, net export and GDP of US economy?

    (4) (7%) According to the policy statement described by Chairwoman Janet Yellen, please graphically analyze the impact of the policy statement on the equilibrium interest rate, exchange rate, general price level, net export and GDP of Taiwan economy.