Explain why you agree, disagree, or partially agree with each of the following statements. The credit you earn will depend 100% on the EXPLANATION you provide. Each question is worth 20 points.

1. STATEMENT: Suppose domestic saving equals 27 and domestic investment equals 35. Then, assuming the official settlements balance equals 0 and the statistical discrepancy also equals 0: (a) the current account balance equals 32; and (b) the capital account balance equals -62.

SOLUTION: **DISAGREE.** First, recall that:

\[ \text{Domestic Saving} - \text{Domestic Investment} = \text{Current Account Balance}. \]

So, since domestic saving equals 27 and domestic investment equals 35, the current account balance is -8 (27 - 35 = -8). Next, recall that:

\[ \text{Current Account Balance} = \text{Net Capital Flows}. \]

So, net capital flows, which equal the negative of the capital account balance, also equal -8, which implies that the capital account balance is 8. Another way to determine the capital account balance is to recall that, with the official settlements balance and statistical discrepancy both equaling 0, the sum of the current account balance plus the capital account balance is 0. So, since the current account balance is -8, the capital account balance must be 8.

2. STATEMENT: Consider a U.S. investor who holds shares of common stock in a French firm and receives a $10,000 dividend-income payment from the firm. Suppose this payment is made by the French firm writing a $10,000 check from a demand-deposit account it holds in a U.S. bank. Then, the double-entry bookkeeping record of this transaction is as follows: (a) there’s a -$10,000 entry in the U.S. current account, since there’s an increase in US financial assets; and (b) there’s an offsetting +$10,000 entry in the U.S. capital account, since there’s a decrease in US financial liabilities.

NOTE: in your explanation, be sure to refer to the changes-in-assets/liabilities accounting rule discussed in class.

SOLUTION: **DISAGREE.** Let’s first identify the negative entry into the U.S. balance of payment account. Since the French firm writes a check to the U.S. investor from its demand-deposit account in a U.S. bank, there’s a decrease in U.S. financial liabilities to foreigners (from your Principles Macro class, recall that funds in a demand-deposit account are a liability for the bank). This decrease in financial liabilities is represented by an entry of -$10,000 in the U.S. capital account.

Next, recall that income flows appear in the current account. This, plus the double-entry nature of the accounting implies there is an offsetting entry of $10,000 in the U.S. current account for this transaction. But how does the changes-in-assets/liabilities accounting rule come into play here? From the BOP reference from the Boston Fed listed on the course web site, we see that this credit entry reflects the fact that the U.S. investor has given up an asset (the services of capital over the period covered) that is valued at $10,000 (see “Transaction 3”).
3. STATEMENT: Let $S(\€/\$)$ represent the spot euro-per-U.S.-dollar exchange rate and $S(\$/¥)$ represent the spot U.S.-dollar-per-Japanese-yen exchange rate. Suppose that on Sep. 14, 2005, $S(\€/\$) = 0.95$ and $S(\$/¥) = 0.01$, and on Sep. 16, 2005, $S(\€/\$) = 0.90$ and $S(\$/¥) = 0.011$. Then, between Sep. 14 and Sep. 16, the euro appreciated against the Japanese yen.

SOLUTION: DISAGREE. First, we need to compute $S(\€/¥)$, the spot euro-per-Japanese-yen exchange rate (or its inverse) for each day. Since:

$$\€/\$ \times \$/¥ = \€/¥,$$

we can compute $S(\€/¥)$ by multiplying $S(\€/\$)$ by $S(\$/¥)$. So, on Sep. 14, $S(\€/¥) = 0.95 \times 0.01 = 0.0095$, and on Sep. 16, $S(\€/¥) = 0.90 \times 0.011 = 0.0099$. Since $S(\€/¥)$ increased, one yen can be exchanged for more euros, which means the yen has appreciated against the euro.

NOTE: Several students made a mistake by dividing $S(\€/\$)$ by $S(\$/¥)$ for both days, e.g., for Sep. 14, computing $0.95/0.01 = 95.0$. To see why this is not a particularly useful calculation, note that:

$$\€/\$ \div \$/¥ = (\€ \times ¥) / (\$ \times ¥) \neq \€/¥.$$

4. STATEMENT: Suppose the Danish krone-per-U.S.-dollar rate in New York in 7.065 Dkr/$, the British pound-per-U.S.-dollar rate in New York is 0.75 £/$, and the Danish krone-per-pound rate in London is 13.25 Dkr/£. Then, if:

(a) $1$ million worth of Danish krone are bought in New York;
(b) the Danish krones bought in New York are used to purchase British pounds in London; and
(c) then the British pounds bought in London are used to buy U.S. dollars in New York;

the profit earned by this triangular arbitrage opportunity equals $16,324.

SOLUTION: DISAGREE. In step (a), Dkr7,065,000 are bought in New York. In step (b), the Dkr7,065,000 are used to buy £533,208 in London (divide 7,065,000 by the Danish krone-per-pound rate in London of 13.25). In step (c), the £533,208 are used to buy $710,944 in New York (divide 533,208 by the British pound-per-U.S.-dollar rate in New York of 0.75). So, this sequence of transactions would actually lead to a LOSS of $289,056 (subtract $710,944 from $1 million).

5. STATEMENT: Let $S(\$/€)$ represent the spot U.S.-dollar-per-euro exchange rate, and suppose that German demand for U.S. goods, services, and assets denominated in U.S. dollars increases. All else equal, $S(\$/€)$ increases.

NOTE: in your answer, make sure to include a graph of the associated behavior in the foreign-exchange market of the type discussed in class.

SOLUTION: DISAGREE. Let’s start with a description of the two panels in Figure 2-4 on p. 54 of the text. From the discussion in class and the text, recall that German demand for the U.S. dollar also represents the supply of euros. So let’s first focus on German demand for the U.S. dollar, which is represented by a downward-sloping curve in a graph with $Q_\$, the quantity of U.S. dollars, measured on the horizontal axis, and $S^*(\€/\$)$, the spot euro-per-U.S.-dollar exchange rate, measured on the vertical axis. This demand curve is downward sloping, since as $S^*(\€/\$)$ decreases, U.S. goods, services, and assets become cheaper to German consumers and firms, and thus a higher quantity of U.S. dollars is demanded to facilitate the associated transactions. So, as $S^*(\€/\$)$ decreases, more euros are supplied, and since a decrease in $S^*(\€/\$)$ means that $S(\$/€)$ increases, the supply curve for euros is upward-sloping in a graph with Q measured on the horizontal axis and $S(\$/€)$ measured on the vertical axis.

If there’s an increase in German demand for U.S. goods, services, and assets denominated in U.S. dollars, then the demand curve for dollars shifts to the right, which means that the supply curve for euros also shifts to the right. Given a downward-sloping demand curve for euros, this implies that $S(\$/€)$ decreases, which implies that the euro depreciates relative to the U.S. dollar.