1. **If the Japanese yen–U.S. dollar exchange rate is ¥104.30/$, and it takes 25.15 Thai baths to purchase 1 dollar, what is the yen price of the baht?**

*Answer:* To prevent triangular arbitrage, the direct quote of the yen price of the baht (¥/THB) must equal the yen price of the dollar times the dollar price of the baht (which is the reciprocal of the baht price of the dollar):

$$¥104.30/\$ \times 1/(THB25.15/\$) = ¥104.30/\$ \times \$0.03976/THB = ¥4.1471/THB$$

2. **Alumina Limited of Australia has called Mitsubishi UFJ Financial Group to get its opinion about the Japanese yen–Australian dollar exchange rate. The current rate is ¥67.72/A$, and Mitsubishi thinks the Australian dollar will weaken by 5% over the next year. What is Mitsubishi UFJ's forecast of the future exchange rate?**

*Answer:* If the Australian dollar weakens by 5% over the next year, it will take 5% fewer Japanese yen to purchase the Australian dollar. Thus, the forecast is

$$¥67.72/A\$ \times (1 - 0.05) = ¥64.334/A\$$$

3. **Please, go to Refinitiv or another financial web site and calculate cross-currency rate for BRL/TRY**

4. **Please, go to Refinitiv or another financial web site and calculate cross-currency rate for MXN/CAD. Is there an arbitrage opportunity, if MXN/CAD equals to 0,090?**

*Answer:* This indirect cross rate is less than the direct quote so there is an arbitrage opportunity to exploit between the three currencies. In this situation, buying the CAD with MXN by first buying USD with MXN and then buying the CAD with the USD and finally selling that amount of CAD directly for MXN would make a profit because we would be buying the CAD at a low MXN price and selling the CAD at a high MXN price.

5. **Please, go to www.fxstreet.com (or tradingview), find the "Rates and Charts" and "Live Charts" and "Chart Tools" and plot the exchange rate of the dollar vs. the euro with a "candle stick" high-low chart at 5-minute intervals for one day, daily intervals for one month, and weekly intervals for one year.** Find on the chart some trends and observe the dynamics. What are the drivers of FX movements?

6. **How large are the bid–ask spreads in the interbank spot market? What is their purpose? Go to tradingview.com web site and find bid and ask price of EUR/USD. Calculate the spread in percentage points.**

*Answer:* The purpose of the bid-ask spread is to allow traders to profit by buying a currency at a low bid price and selling that currency at a higher ask price. Bid–ask spreads in the spot foreign exchange market are quite small, often only two or three basis points.

BID: 0.9682    ASK: = 0.9683,    spread = 1 pip

$$\frac{(ASK - BID)}{(ASK + BID)/2} x100$$

$$\frac{(0.9683 - 0.9682)}{(0:9683 + 0.9682)/2} x100 = 0,1\%$$

7. **If the direct euro price of the British pound is higher than the indirect euro price of the British pound using the dollar as a vehicle currency, how could you make a profit by trading these currencies?**
   **You know the following quotations on the market. Is there arbitrage opportunity?**

EUR/GBP = 0.8700
EUR/USD = 0.9850
GBP/USD = 1.1100

**Calculate:**

1, We calculate cross currency rate of EUR/GBP from the above quotations:

EUR/USD x (1/GBP/USD) = 0.8700 x (1/1.1100) = 0,7838 this does not equal to 0,8700 = there is triangular arbitrage opportunity.

If we start with €10,000,000, we can convert euros to dollars and get

$$€10,000,000 \text{ x } €0.9850/\$ = \$9,850,000$$

Converting these dollars into pounds gives

$$\$9,850,000/\$1.1100/£ = £8,873,874$$

Converting these pounds into euros gives
$$€0.8700/£ / £8,873,874 = €10,199,855.$$

Thus, we make a profit of €199,855 or 2.00%.