Section 2.5 Currency Conversions

Different countries developed their own currencies, so now each currency has its own value. Since each country has to import and export goods, exchange rates between different currencies are calculated. These exchange rates are often displayed using a table. When two currencies are compared, the value of one currency is given in the units of the other. We can see the exchange rates given between US dollars ($), GB pounds sterling (£), and Japanese yen ¥.

	US $	GB £	JAPAN ¥
US $	1	0.51	117
GB £	1.96	1	229.3
JAPAN ¥	0.00855	0.004 36	1

To use this table, find the currency you currently have on the left and move to the column of the currency you want. Say we have GB pounds. This table shows that 1 GB pound is equal to $1.96 and ¥229.3

Example: If you want to know how much 800 GB pounds would be in dollars or yen, just multiply the conversions by 800. So that would be $1568 or ¥183,440

Note: If you are not given a table but simply given a fact like 1 GB = US $1.96, you can convert in the opposite direction by doing the reciprocal.

So $1 \text{ US } \$ = \frac{1}{1.96} \text{ GB}$ or 1 US $ = 0.510 GB

Example: 1 Brazilian real (BRL) = 3.984 South African Rand (ZAR). How many BRL does it cost to purchase 500 ZAR

$1 \text{ ZAR} = \frac{1}{3.984} = 0.251 \text{ BRL} \Rightarrow (500)(0.251) = 125.50 \text{ BRL}$

Another type of conversion table is used when currency is bought and sold by a currency broker. A currency broker earns money by selling currency for more than they pay for it. They also often charge an additional commission fee, which is taken out of the money their customers want to convert. An example table is shown below.

	Buying price (£)	Selling price (£)
US $1	0.48	0.49
AUS$1	0.43	0.44
CAN$1	0.49	0.5

From this chart we can see that if we have US $1, the currency broker will buy our dollar from us for £0.48, and sell us our dollar back for £0.49. In practice, a currency broker will buy currency from one person and sell it to another, making money in the process.

Example: So $800 would get us (800)(0.48) or £384 from the broker. If we sell our £384 back to the broker to get US Dollars back, we will get 384 ÷ (0.49) or $783.67

Instead of having a buying and selling price, some brokers charge a commission. They charge it in the currency that they buy and sell. A typical commission is 2.5% of the total amount of currency converted. That means you will receive only 97.5% of the currency you are exchanging.

Example: So let's convert our $800 into GB Pounds with a 2.5% commission.

According to our table at the beginning of our lesson, 1 US $ = 0.51 GB Pound.

So (800)(0.51) = £408

But I have to pay the commission. So I only get 97.5% of that money.

(408)(.975) = £397.80

Important note: Unless told otherwise, ALWAYS give your money with 2 decimal places (unless it comes out exact). You will lose points on the exam if you don't.

Example: Anya travels from Ireland to England. Once she gets to England she needs to change €1200 (Euros) into GBP. She has two choices. Which bank is the best?

Bank A:

Charges 1.6% commission
Exchange rate: €1 = £0.851483

So (1200)(.851483) = 1021.78

1.6% commission means I get 98.4%

(1021.78)(.984) = £1005.43

Bank B:

	We Buy (£)	We Sell (£)
EUR (€)	0.87504	0.83736

So (1200)(.87504) = £1050.05

So Bank B is the best!

Example: Sjors is travelling to France. He withdraws 8000 Swedish kronor (SEK) from his savings and converts it to euros. The local bank buys SEK at 0.111 euros and sells at 0.121 euros.

a. How much will he receive in euros?

(8000)(0.111) = 888€

b. The trip is cancelled. How much will he receive if the euros from part a are changed back to SEK?

(888)÷(0.121) = 7338.84 SEK

c. How much did he lose after two transactions?

8000 – 7338.84 = 661.16 SEK