Lesson 4

Currency and Exchange Rate

4.0 Review

Make groups of suitable number of students and discuss the followings:

a) You are going to visit abroad for an educational excursion. Can you buy goods and food items by spending Nepali rupees there?

b) Sagun is a prestigious businessman. He imported goods from abroad countries. Can he pay the bills in Nepali rupees?

c) Nepali people working abroad send money in Nepal. Do their family get the money in Nepali rupees? At what basis do they get the money in Nepali rupees of the foreign currency?

In the above mentioned conditions, wherever we go or conduct our business, we use the currency of the respective country. Family gets the Nepali currency if the money sent from different countries.

4.1 Currency and Exchange Rate

Activity 1

Make groups of suitable number of students. Study the exchange rate of currency of several countries issued by Nepal Rastra Bank on Bhadra 5, 2079, and answer the following questions:

Nepal Rastra Bank

Central Office, Thapathali, Kathamandu

Bhadra 5, 2079 (August 21, 2022

Country	Currency	Unit	Buying rate (Rs.)	Selling rate (Rs.)	Symbol
India	Indian Rupees	1	160.00	160.15	₹
America	American Dollar	1	127.35	127.95	$
Countries in European Union	Euro	1	128.13	128.73	€
UK	Pound Sterling	1	150.94	151.65	£

Switzerland	Swiss Frank	1	133.13	133.76	CHF
Australia	Australian Dollar	1	87.82	88.23	AUD$
Canada	Canadian Dollar	1	98.08	98.54	CAD$
Singapore	Singapore Dollar	1	91.68	92.11	SGD$
Japan	Japanese Yen	10	9.32	9.37	¥
China	Chinese Yuan	1	18.70	18.79	¥
Saudi Arabia	Saudi Arabian Riyal	1	33.91	34.07	SARريال
Qatar	Qatarian Riyal	1	34.82	34.98	QARريال
Thailand	Thai Bhat	1	3.57	3.59	THB ฿
United Arab Emirates	United Arab Emirate Dihram	1	34.67	34.83	إ.د
Malaysia	Malaysian Ringgit	1	28.45	28.58	MR
South Korea	South Korean wan	100	9.58	9.63	₩
Sweden	Swedish Corner	1	12.07	12.12	SEK kr
Denmark	Denish Corner	1	17.23	17.31	DKK kr
Hongkong	Hongkong Dollar	1	16.23	16.31	HKD $
Kuwait	Kuwaiti Dinar	1	414.23	416.18	KD ك.د
Bahrain	Bahrain Dinar	1	337.80	339.39	BD ب.د

a) Who determines the exchange rate of currency in our nation?

b) If the currency of America is called dollar. What is the currency of China called?

c) According to the exchange rate given above, why is selling rate more than the buying rate?

d) What are buying rate and selling rate? Discuss.

The exchange rate of currency of a country to another country will be determined by the government or central bank of the country. Such rate is called foreign currency exchange rate. In our country, exchange rate with India is fixed and exchange rate with other countries are instable. In our country, the exchange rate is declared by Nepal Rastra Bank. The exchange rate given by bank or other financial institutions while purchasing the foreign currency is called buying rate. Similarly, the exchange rates fixed by bank or other financial institutions while selling the foreign currency is called selling rate.

Example 1

Based on the exchange rate given above, find the difference between buying and selling price of pound sterling 500.

Solution

According to the buying rate, 1 pound sterling = Rs. 150.94

Now, buying price of 500 pound sterling = Rs. 150.94 × 500 = Rs. 75,420

Again, according to the selling rate, 1 pound sterling = Rs. 151.65

Selling price of 500 pound sterling = Rs. 151.65 × 500 = Rs. 75,825

Hence, the difference between selling price and buying price = Rs. 75,825 – Rs. 75,420 = Rs. 405

Example 2

The exchange rate between the American Dollar and Nepali rupees for a specific day is $ 1 = Rs. 126.35

a) How many American Dollars can be exchanged for Rs. 85,500?

b) How many rupees can be exchanged for $ 3,000 ?

Solution

Here, a) $ 1 = Rs. 126.35

Or, Rs. 126.35 = $1

Or, Rs. 1 = $ $\frac{1}{126.35}$

or, Rs. 85,500 = $ $\frac{1}{126.35}$ × 85,500 = $676.69

b) Again, $ 1 = Rs. 126.35

Or, $ 3000 = Rs. 126.35 × 3000 = Rs. 3,79,050

Example 3

Based on the above mentioned exchange rate, change the following currencies:

a) 1 Canadian Dollar into Japanese Yen

b) 250 Australian Dollar into Swiss Frank.

Solution

Here, a) 1 Canadian Dollar = Rs. 98.08

Or, Rs. 98.08 = 1 Canadian Dollar (According to buying rate)

Or, Re. 1 = $\frac{1}{98.08}$ .....(i)

Again, 10 Japanese Yen = Rs. 9.37

Or, Rs. 9.37 = 10 Japanese Yen (According to the selling rate)

Or, Rs. 1 = $\frac{10}{9.37}$ .....(ii)

From equation (i) and (ii), we have

$\frac{1}{98.08}$ Canadian Dollar = $\frac{10}{9.37}$ Japanese Yen

1 Canadian Dollar = $\frac{10 \times 98.08}{9.37}$ Japanese Yen = 104.67 Japanese Yen

Hence, 1 Canadian Dollar = 104.67 Japanese Yen.

Alternatively,

Let Canadian $ 1 = x Japanese Yen

Now, we have,

Canadian Dollar $1 = x Japanese Yen

10 Japanese Yen = Rs. 9.37

NRs. 98.05 = Canadian $1

Yeh! While exchanging currency of other countries in Nepal, the currency of the country can be got after exchanging in Nepalese currency at first. The banks give Nepalese rupees for foreign currency at buying rate and foreign currency for Nepalese rupees at the selling rate to us.

Multiply each values of the left hand side and similarly multiply each values of the right hand side. Then, we have;

$1 \times 10 \times 98.05 = x \times 9.37 \times 1$

Or, $10 \times \frac{10 \times 98.05}{9.37} = x$

Or, x = 104.67

Hence, 1 Canadian Dollar = 104.67 Japanese Yen.

1. Since starting with Canadian Dollar on the left hand side and taking Japanese Yen on the right hand side of first line, start with Japanese Yen in the second line.
2. Since the Nepali Rupees on right hand side of second line, write Nepali rupees on the left hand side and the Canadian Dollar on the right hand side of the third line because it is started with Canadian dollar.

b) 1 Australian Dollar = Rs. 87.82

Or, Rs. 87.82 = 1 Australian Dollar

Or, Rs. 1 = $\frac{1}{87.82}$ Australian Dollar .....(i)

Again, 1 Swiss Frank = Rs. 133.76

Or, Rs. 133.76 = 1 Swiss Frank

Or, Rs. 1 = $\frac{1}{133.76}$ Swiss Frank .....(ii)

From equation (i) and (ii), we get

$\frac{1}{87.82}$ Australian Dollar = $\frac{1}{133.76}$ Swiss Frank

or, 1 Australian Dollar = $\frac{1 \times 87.82}{133.76}$ Swiss Frank

Or, 250 Australian Dollar = $\frac{87.82}{133.76}$ × 250 Swiss Frank = 164.14 Swiss Frank

Hence, 250 Australian Dollar = 164.14 Swiss Frank

Alternatively

Let, 250 Australian Dollar = x Swiss Frank

1 Swiss Frank = Rs. 133.76

Rs. 87.82 = 1 Australian Dollar

$250 \times 1 \times 87.82 = x \times 133.76 \times 1$

Or, $x = \frac{250 \times 87.82}{133.76}$

= 164.14 Swiss Frank

The alternative process of finding the values of unknown variables other than unitary method, ratio and proportion is chain rule.

Let, A, B and C are the currencies of different countries, then

If A = B, B = C and C = A then

A × B × C = B × C × A

Example 4

If American Dollar ($) 500 = Pound Sterling (£) 390 and Nepali Rupees Rs. 7,547 = Pound sterling (£) 50, find how many American Dollars can be exchanged for Nepali Rupees. 10,308?

Let, American dollar $ x = Nepali Rupees Rs. 10,308

And then write accordingly,

$ 500 = £ 390

£ 50 = Rs. 7,547

Rs. 10, 308 = x

Using chain rule, we have

or, $500 \times 50 \times 10{,}308 = 390 \times 7547 \times x$

or, $\frac{500 \times 50 \times 10308}{7547 \times x} = x$

or, $x = 87.55$

Hence $ 87.55 can be exchanged for Nepali Rupees 10, 308.

Example 5

A businessman exchanged Nepali Rupees 8,40,000 at the exchange rate of the Pound Sterling (£) 1 = Rs. 150. After 5 days, Nepali currency is deflated by 5% and then he exchanged Nepali currency into Pound Sterling. How much profit or loss does he get?

Solution

A businessman exchanged the Pound Sterling for Rs. 8,40,000

Rate of deflation = 5%

Loss or profit = ?

Now,Rs. 150 = £ 1

Or, Rs. 1 = $\frac{1}{150}$

Or, Rs. 8,40,000 = £ $\frac{1}{150}$ Rs. 8,40,000 = £ $\frac{1}{150} \times$ 8,40,000 =£ 5,600

Since Nepali currency is deflated by 5% in 5 days, then new exchange rate is:

£ 1 = Rs. (150 – 5% of 150) = 150 – 150 $\times \frac{5}{100}$ = Rs. 150 – Rs. 7.50 = Rs. 142.50

Again, he exchanged his Pound Sterling into Nepali Rupee.

Thus, £ 5,600 = Rs. 142.50 × 5,600 = Rs. 7,98,000

Here, Rs. 7,98,000 < Rs. 8,40,000 so he gets a loss.

Hence, loss amount = Rs 8,40,000 – Rs. 7,98,000 = Rs. 2,000

Example 6

A businessman of Nepali origin from Norway purchased 900 Pasmina shawls at the rate of Rs. 4,000 in Kathmandu. He exported by paying 5% export tax and then at how much Euro should he sell all the shawls at the profit of 20%? (€1 = Rs. 130)

Solution

Here, the price of a Pasmina shawl = Rs. 4,000

The cost of 900 shawls = Rs. 4,000 × 900 = Rs. 36,00,000

The cost price of the shawls including 5% export tax = Rs. 36,00,000 + 5% of Rs. 36,00,000

$$= \text{Rs. } 36,00,000 + \text{Rs. } 36,00,000 \times \frac{5}{100}$$

$$= \text{Rs. } 37,80,000$$

We know that, €1 = Rs. 130

Or, Rs. 130 = €1

Or, Rs. 1 = €1/130

Or, Rs. 37,80,000 = $\frac{€1}{130}$

or, Rs. 37,80,000 = $\frac{€1}{130} \times 37,80,000$

$$= €29076.92$$

∴ The total cost price in euro = €29076.92

To sell at the profit of 20%

The total selling price of 900 shawls = $€29076.92 + €29076.92 \times \frac{20}{100}$

$$= €29076.92 + 5,815.38$$

Hence, the selling price of all the shawls = € 34,892.30

Alternatively

The cost of 900 Pasmina shawls with 5% export tax = Rs. 37,80,000

To sell with 20% profit,

The selling price of 900 shawls = Rs. 37,80,000 + 20% of Rs. 37,80,000

= Rs. 37,80,000 + Rs. 7,56,000

= Rs. 45,36,000

Now, Rs. 130 = €1

Or, Rs. 1 = $\frac{€1}{130}$

Rs. 4536000 = $\frac{€1}{130} \times 4536000$

= 34892.30

∴ The selling price of all the shawls = €34892.30

Exercise 4

1. a) What is meant by money exchange?

b) Which of the buying rate or selling rate does a Nepali student use to exchange Nepali Rupees into American Dollars while s/he is going for abroad study in America? Write.

2. By using the buying rate money exchange given above, change the following currency of different countries into Nepali currency:

a) Indian Rupees 1425
b) American Dollar 2000
c) Pound Sterling Dollar 4672
d) Australian Dollar 672
e) Saudi Arabian Riyal 1851
f) Qatari Riyal 2225
g) South Korean Wan 58,230
h) Hongkong Dollar 4512
i) Malaysian Ringgit 6725
j) Chinese Yuan 3450

3. By using the selling rate of money exchange, change Rs. 2,00,000 into the following currencies:

a) Australian Dollar
b) American Dollar
c) Euro
d) United Arab Emirates Dirham

4. According to the exchange rate declared by Nepal Rastra Bank on a specific day, the buying and selling rate for 1 American Dollar are Rs. 127.50 and Rs. 128 respectively,

a) How many American Dollars can be exchanged for Rs. 81,280?

b) Find how many Nepali Rupees can you exchange with American Dollar 600?

5. According to the exchange rate declared by Nepal Rastra bank on 23 August 2022, the buying and selling rate for Chinese Yuan 1 are Rs. 18.64 and Rs. 18.73 respectively,

a) How many Chinese Yuan can be exchanged for Rs. 37,460?

b) How many Nepalese rupees can you exchange with Chinese Yuan 5000?

6. Using the above-mentioned abovementioned, answer the following questions:

a) How many United Emirates Dirhams are equal to 1 Euro?

b) How many Malaysian Ringgits are equal to 1 Qatari Riyal?

c) How many Canadian Dollars are equal to 200 American Dollar.

d) How many Thai Bhatts are equal to 200 Pound Sterling?

7. Sobita went to Australia from Nepal for her higher studies. After completing her studies, she has been working as a secondary level teacher. She earns 37 Australian Dollar per hour. She teaches 5 hours a day except Sunday. If exchange rate of the Australian Dollar 1 = Rs. 90,

a) How much salary does she have in Nepali Rupees for a week?

b) Find how much monthly salary does she have in Nepali Rupees?

8. a) An American businessman exchanged American Dollar for NRs. 12,40,000 at the exchange rate of American Dollar 1 = NRs. 124. After a week, Nepali currency is inflated by 10%. At that time, he exchanged the dollar into Nepali currency then, how much loss or profit have? Find it.

b) A businessman buys goods from Thailand. For this, he exchanged Nepali currency Rs. 7,20,000 at the exchange rate 1 Thai Bhatt = NRs. 3.60. After a day, Nepali currency is deflated by 5%. Due to the inadequate circumstances of the country, he wishes not to buy the goods from Thailand. So that at that time of deflation, if he again exchanged the Thai Bhatt into Nepali currency, how much loss or profit will he have? Find it.

9. a) A Nepali went to visit the UAE. In that time, he purchased a branded television of 75 inch for 10,000 Dirham. The exchange rate of that day was UAE Dirham 1 = NRs. 34.50. He paid 20% custom tax and 13 VAT. His relative wishes to buy it. At what price should he sell at break-even? Find it.

b) 20% profit can be gained at a good sold for Indian rupees 21,600. At what Nepalese rupees can it be sold to gain 25% profit?

10. a) A Nepali does business in Australia. He came to Nepal for his household work. He wished to take 500 Pasmina shawls while returning back. He purchased the shawls at the rate of Rs. 3,500 each. He took it in Australia by paying 5% export tax. He paid Australian Dollar 30 for transportation from the airport to his residence. He sold the shawls at the rate of Australian Dollar 80 for each, find the loss or profit percent he got. (Australian dollar 1 = NRs. 88.50)

b) The fair of air ticket from Kathmandu to Bangkok of Nepal Airlines is Rs. 28,000. Again, if the same ticket can be bought for 8000 Thai Bhat for Thailand, what percentage is it cheaper to buy the ticket from which place? (Thai Bhatt 1 = NRs. 3.50)

11. a) If the American Dollar 176 = 100 Pound Sterling and Pound Sterling = Nepali Rupees 151, how many Nepali Rupees can be exchanged for 132 American Dollars?

b) If I.C. 100 = NRs. 160 an d 1 American Dollar = NRs. 120, how many American Dollars are equal to I.C. 7500?

c) If Chinese Yuan 1 = NRs. 18.70 and UAE Riyal 1 = NRs. 33.91, then change the Chinese Yuan 5612 into the United Arab Emirates Riyal.

Project work

Make groups of suitable number of students. Collect exchange rates of the day searching from newspapers or the internet. Do you find difference in exchange rate of the day from the exchange rate of 2 days before? Besides, how much is the cost of gold per kilogram or per tola or per gram in the international market on that day? How much is in America? How much is in UK? How much is in Australia? How much is in the United Arab Emirates? On that day, in which city is the gold cheaper to buy in which city of which nation? Cheaper by how much. Prepare a report & present it to the class.

Answers

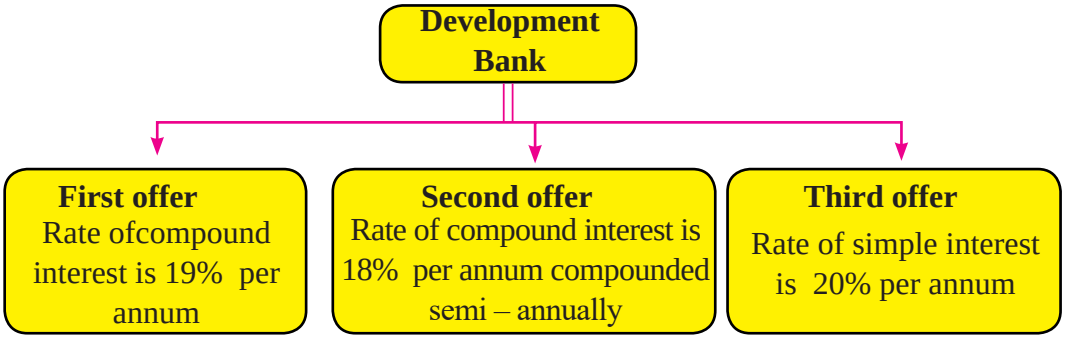
2. (a) Rs. 2280 (b) Rs. 254700 (c) Rs. 704724.48
   (d) Rs. 59015.04 (e) Rs. 62767.41 (f) Rs. 77474.5
   (g) Rs. 5578.43 (h) Rs. 73229.76
   (i) Rs. 191326.25 (j) Rs. 64515
3. (a) Australian $2266.8 (b) American $1563.11
   (c) Pound Sterling €1553.63 (d) Dirham 5742.17
4. (a) ($)635 (b) Rs. 76,500
5. (a) Chinese Yuan 2000 (a) Rs. 93,200
6. (a) Dirham 3.68 (b) Malaysian Ringgit 1.22
   (c) Canadian Dollar 258.47 (d) Thai Bhatt 8408.91
7. (a) 99,900 (b) 4,99,500
8. (a) Profit = Rs. 1,24,000 (b) Loss = Rs. 36,000
9. (a) Rs. 4,67,820 (b) NRs. 36,000
10. (a) Profit = 92.37% (b) 6.97% cheaper in Kathmandu
11. (a) Rs. 11,325 (b) Dollar 100
    (c) UAE Riyal 3094.79

Mixed Exercise

1. A family wants to deposit Rs. 4,00,000 in the account of a child aged. If who has just started grade 11. The money is intended for his/her study. If the money is deposited with the agreement that the amount with principal and interest would be drawn after he/she passed grade 12 at the age of 19. Then,

a) How many times will the interest be calculated in 2 years according to the half yearly compound interest? Write.

b) Which of the following alternatives would you suggest to your parents to deposit the money and why? Justify with calculation.



2. A sum of money amounts to Rs. 12,000 and Rs. 13,200 in 2 years and 3 years respectively at a certain rate of interest compounded annually.

(a) Write the formula to find the compound interest.

(b) What should be the rate of the compound interest?

(c) What should be the principal?

3. A man bought a land at Rs. 80,00,000 on 25th Baisakh of 2075 BS and started construction of a house on the same day . The construction of the house completed at the cost of Rs. 2,70,00,000. The price of land increased at the rate of 20% per year and the price of house decreased at the rate of 20% per year.

(a) What does R indicate in the price after T years $(P_T) = P\left(1 + \frac{R}{100}\right)^T$?

(b) What will be the price of the land after 2 years?

(c) What will be the price of the house after 2 years?

(d) Will the prices of the land and house be the same after 2 years? If not, in how many years will the prices of the land and house be equal?

4. Ram exchanged some Nepali rupees with American dollars at the exchange rate of $1=Rs. 110. After 5 days, Nepali currency devalued against American dollars by 10% and he made a profit of Rs. 33,000 by exchanging the same dollars into Nepali currency again.

(a) What is meant by exchange rate of currency?

(b) How much Nepalese rupees are equal to one American dollar ($1) after devaluation of the Nepali currency?

(c) Find how much Nepali rupees did Ram exchange with American dollars at first?

(d) How much profit or loss would be there for him, if the Nepali rupees had revalued by 10% instead of devaluation of 10%?

5. The management committee of Nepal Bank Limited in its regular meeting has decided to change its annual policy slightly. According to the decision, the rate of interest for fixed deposit compounded semi annually is given below.

Depositing period	Rate of interest	Minimum deposit amount
Up to 6 months	6.75 %	Rs. 50,000
From 6 months to 1 year	7.25%	Rs. 50,000
From 1 year to 6 years	7.5%	Rs. 75,000

Sujit Thakur borrowed Rs. 2,00,000 from a cooperative one condition of paying it back in 2 years at the rate of simple interest of 5%. Immediately after borrowing, he deposited the same sum in a fixed deposit account of Nepal Bank Limited for the same duration.

(a) Which rate of interest should Sujit Thakur deposit the money in the fixed deposit?

(b) Find the compoun d amount that Sujit Thakur could receive in 2 years.

(c) Find the total amount to be paid to cooperative in 2 years.

(d) How much profit did Sujit Thakur earn in 2 years?

6. Anish has returned back Nepal from United Arab Emirate after 5 years. He earned 60,000 United Arab Emirate Dirhams and exchanged it with the Nepali rupees at the exchange rate of 1 Dirham = Rs. 34.83. He deposited the sum in the fixed deposit account of Nepal Bank for 1 year as per the following rate of interest compounded semi - annually.

Depositing Period	Rate of interest	Minimum deposit amount
Up to 6 months	9 %	Rs. 50,000
From 6 months to 1 year	10%	Rs. 50,000
From 1 year to 5 years	12%	Rs. 75,000

(a) Which body of government decides the exchange rate of currency in our country?

(b) How much Nepali rupees did Anish receive by exchanging 60,000 united Arab Emirate Dirhams?

(c) Which deposit offer of the bank is applicable for Anish? Give reason.

(d) How much amount will Anish receive from the bank after 1 year?

7. The price of a piece of land in Kathmandu was fixed at Rs. 60,00,000 at the end of 2020 AD. The price increased by 10% as the consequence of increasing buying pressure at beginning of 2021. But the price of land decreased by 4% due to the economic crisis at the end of 2022 AD.

(a) What does P $\left(1+\frac{R}{100}\right)^{T}-P$ as per usual notation indicate?

(b) What will be the price of the land at the end of 2022?

(c) How much loss will be there to the person if the price decreased by 5% instead of decreasing by 4% in 2022 AD?

8. Kul Bahadur decided to go for foreign employment and lent a sum of Rs. 2,50,000 for 2 years at the interest rate of 15% compounded annually from a cooperative bank. After 1 year, he remitted 7,000 Ringgits to his home from the saving.

(a) Write the formula to find the compound amount.

(b) What is the total amount to be paid after 1 year?

(c) How much Nepali rupees are equal to Malaysian Ringgits 7,000?

(d) How much total amount should he pay to clear all the debts finally?

9. A person lent a sum of Rs. 1,50,000 for 2 years at the interest rate of 10% per annum compounded annually. He paid Rs. 85,000 at the end of the first year.

(a) How much total amount should he pay to clear all the debts at the end of second year?

(b) Find the total interest that he paid in two years.

(c) If he cleared all the debts only after two years, how much more or less interest should have been paid?

Answers

1. (a) 4 times (b) As the first offer
2. (a) P $\left[\left(1+\frac{R}{100}\right)^{T}-1\right]$ (b)10% (c) 9917.35
3. (a) Growth rate (b) Rs. 1,15,20,000 (c) Rs. 1,72,80,000 (d) No, 3 year
4. (b) Rs. 121 (c) Rs. 3,30,000 (c) Rs. 33,000 loss
5. (क) 7.5 % (b) Rs. 2,31,125 (c) Rs. 2,20,000 (d) Rs. 31,125
6. (a) Central Bank of Nepal (b) 20,89,800 (c) 10 % (d) Rs. 23,04,004.5
7. (a) increase (b) Rs. 63,36,000 (c) Rs. 66,000 (loss)
8. (b) Rs. 2,87,500 (c) Rs. 2,00,060 (d) Rs. 1,00,556
9. (a) Rs. 88,000 (b) Rs. 23,000 (c) Rs. 8,500 more