Chapter 15 COMPARISON OF QUANTITIES

15.1 Ratio – Proportion

Bhagat and Pratap started making map of Rajasthan. Bhagat told that to draw a large map on paper determine right ratio of measure (scale). They took 100 km = 1 cm and showed the road distance from Udaipur to Ajmer as 2.25 cm. At the same time, their classmates Keshav and Kalam came there and started finding out the actual distance between Udaipur and Ajmer.

Keshav's Method
Suppose distance = D km then
100 : D : : 1 : 2.25
Or $\frac{100}{D} = \frac{1}{2.25}$

100 x 2.25 = 1 x D
225 = D
Actual distance = 225 Km

Kalam's Method

1 cm shows 100 km
2.25 cm will show
= 100 x 2.25
= 225 Km
So actual distance
= 225 Km

In actual life, proportions are applied for unitary rule, diagramatic presentation of map and proportional representations.

Do and Learn

1. Find the ratio of actual length and breadth of Mathemtics book of class VII.
2. Find the ratio of length and breadth of national flag by taking help from your teacher.
3. Find the ratio of length and breadth of your classroom by measuring it.
4. Measure your height and measure the length by expanding both the hand completely. Now find out the ratio between these two quantities.

Example 1 Find the ratio of 6 km with 400 m.

Solution Here both the quantities show the distance so we write this is one unit only 6 km. $= 6 \times 1000$
$= 6000$ m.

Hence required ratio 6 km : 400 m.
Means 6000 m : 400 m. Or 15 : 1

Example 2 Find out the value of x in following

$3 : 25 :: x : 15$

Solution $\frac{3}{25} = \frac{x}{15}$ (Express ratio form in terms of fraction)

$x \times 25 = 3 \times 15$

$x = \frac{3 \times 15}{25}$ Or $x = 1.8$

Therefore value of $x = 1.8$

Example 3 Farmer Balu required 25 litres of diesel in running a pump set for 15 hrs. If he has 45 litres of diesel then how many hours would he run the pump set?

Solution Available quantity of diesel = 45 litres

From 25 litres of diesel pump set runs = 15 hrs.

From 1 litre of diesel pump set runs $= \frac{15}{25}$

From 45 litres of diesel pump set would run $= \frac{15}{25} \times 45$ hrs.$= 27$ hrs

Exercise 15.1

1. Find the ratio.
   (i) 60 paise with 3 rupees (ii) 340 cm with 4m.
2. Write in simplest ratio.
   (i) 65 : 25 (ii) 72 : 64
3. Find out two equivalent ratios of the following ratios.
   (i) 3 : 5 (ii) 7 : 11
4. The length and breadth of carpet is 7 m. and 35 cm. respectively. Then find the following ratio.
   (i) Breadth with length (ii) Length with breadth
5. If $12 : x :: 14 : 21$ then find the value of x.
6. Bhima halwai mixes 20 kg of sugar into 25 kg pulse for making halwa. While Bhikha halwai mixes 15 kg. of sugar into 12 kg of pulses. Find:
   (i) How much sugar do both the halwais mix in per kg of pulse?
   (ii) The prepared halwa of which halwai is sweeter?

7. 34 labourors are required for cleaning a 10.2 km long road. Then how many labourors are required for cleaning 7.5 km long road?
8. The shadow of 7.5 mt. pole is 5 meter, then find out the height of a tree standing nearby whose shadow is 10 mt. long at the same time.
9. Ramesh covers a distance of 10 km in 15 min by his motorcycle. How much time is required by Ramesh to cover a distance of 26 kms if the speed is same.
10. 3 kg of pulse is required in the midday meal of 60 students. How much quantity of pulse is enough on Saturday at the time of midday meal if 46 students were present?

15.2 Percentage

Pooja and Madhav after taking their exam result say to their mother on entering their house with joy.

Pooja – Mom, see I got 960 marks out of 1200 and I got first position in class.

Madhav – Mom, I got first position in class on getting 975 marks out of 1300. I got more marks than Pooja so I am more intelligent.

Pooja – Mom, how it can happen? Annual maximum marks are also more in Madhav's school?

Think, is Pooja right? Can you settle the dispute between them? At the same time father enters into the house and both of them approach their father to take his decision.

Papa explained in the following way.

For Pooja $\frac{\text{Marks obtained}}{\text{Maximum marks}} = \frac{960}{1200} = \frac{96}{120} = \frac{8}{10} = \frac{4}{5}$

For Madhav $\frac{\text{Marks obtained}}{\text{Maximum marks}} = \frac{975}{1300} = \frac{75}{100} = \frac{3}{4}$

By Equivalent ratio

Pooja

$\frac{4}{5} = \frac{16}{20}$

$\frac{16 \times 5}{20 \times 5}$

$= \frac{80}{100}$

Madhav

$\frac{3}{4} = \frac{15}{20}$

$\frac{15 \times 5}{20 \times 5}$

$= \frac{75}{100}$

$\frac{80}{100} > \frac{75}{100}$

Mom explained them that if maximum marks for both of them is 100 then Pooja gets 80 marks and Madhav gets 75 marks out of 100. Representation of a fraction with denominator 100 is known as how many percentage on each 100 or per hundreds. Percentage is represented by the symbol % which means hundredths. Percentage are fractions with denominator 100 ($\% = \frac{1}{100}$) and numerator of this fraction expresses rate of percentage.

Do and Learn

1. 25 students of a class tell their interests about games.

Kabaddi	-	4 students
cricket	-	11 students
chess	-	6 students
tenis	-	3 students
Other games	-	1 student

Express the number of students in percentage according to the interest in each game.

2. Following results are obtained on taking advice of 250 students on preference of menu of mid day meal in selected schools of Jalore Panchayat.

Menu	Students	Percentage
Chapati -vegetable	80	___%
Rice - pulse	70	___%
Porridge	35	____%
Chapati – pulse	60	___%

Express the percentage of preference of each type of menu from the above results.

Abdul Uncle went out for a morning walk with his two grandsons. He met Khema and Pema, sons of farmer Deva on the way. Abdul Uncle discussed with them about their farming.

Pema – "I sowed wheat in $\frac{3}{4}$ part of my farm and sowed mustard in rest of the part."

Khema – "Uncle, I sowed wheat in $\frac{7}{10}$ part of my farm and in rest of the part I sowed mustard."

Uncle Abdul is returning home after the disussion. Uncle Abdul's grandson Karim said.

Karim – "Grandpa, between Khema Tau and Pema Tau who sowed wheat in more part of his farm?"

We compare the part sown by them by percentage. For this we make such equivalent fraction of $\frac{3}{4}$ and $\frac{7}{10}$ with denominator as 100.

If denominator of any fraction is 100, then the number at the numerator is the percentage.

Part sown by Pema Tau $\frac{3}{4} \times \frac{25}{25} = \frac{75}{100} = 75 \times \frac{1}{100} = 75\%$

Part sown by Khema Tau $\frac{7}{10} \times \frac{10}{10} = \frac{70}{100} = 70 \times \frac{1}{100} = 70\%$

So part sown by Pema Tau is more.

Second Method

We can also express percentage by multiplying the given fraction with $\frac{100}{100}$

$$\frac{3}{4} \times \frac{100}{100} = \frac{300}{4} \times \frac{1}{100} = 75 \times \frac{1}{100} = 75\%$$

$$\frac{7}{10} \times \frac{100}{100} = \frac{700}{10} \times \frac{1}{100} = 70 \times \frac{1}{100} = 70\%$$

15.2.1 Converting percentage into decimal fraction.

For this multiply by $\frac{1}{100}$ after removing %.

e.g. – $25\% = 25 \times \frac{1}{100} = \frac{25}{100} = \frac{1}{4} = 0.25$

15.2.2 Converting decimal fraction into percentage

For this decimal fraction is multiplied by 100%.

e.g. 0.6, 0.03, 0.75 will be converted into percentage in the following way

(i) when 0.6 is multiplied by $100\% = 0.6 \times 100\%$

$$= \frac{6}{10} \times 100\% = 60\%$$

(ii) when 0.03 is multiplied by $100\% = 0.03 \times 100\%$

$$= \frac{3}{100} \times 100\% = 3\%$$

(iii) when 0.75 is multiplied by $100\% = 0.75 \times 100\%$

$$= \frac{75}{100} \times 100\% = 75\%$$

Do and Learn

1. Convert the following fractions into percentage.
   (i) $\frac{5}{8}$ (ii) $\frac{5}{3}$
2. Convert the decimal fractions into percentage.
   (i) 0.5 (ii) 0.08 (iii) 0.225 (iv) 6.5
3. Convert the percentage into simple fraction and decimal fraction.
   (i) 36% (ii) $12\frac{1}{2}\%$ (iii) 3.6%

Example 4 Write the fraction $\frac{3}{25}$ into percentage.

Solution Given number $= \frac{3}{25} \times 100\%$

$= 12\%$

Example 5 There are 44 boys in a class of 55 students. What is the percentage of boys ?

Solution There are 44 boys in a class of 55 students $= \frac{44}{55} \times 100\%$

Hence percentage of boys = 80%

Example 6 Convert following decimal numbers into percentage.

(i) 0.9 (ii) 0.015

Solution

(i) $0.9 \times 100\%$

$= \frac{9}{10} \times 100\%$

$= 90\%$

(ii) $0.015 \times 100\% = \frac{15}{1000} \times 100\%$

$= \frac{15}{10}\% = 1.5\%$

Example 7 22% girls are fond of making rangoli out of 50 girls in a class. Find out the number of girls who are fond of rangoli.

Solution Number of girls making rangoli = 22% of 50

$= 50 \times \frac{22}{100} = 11$ girls

Example 8 Convert the given percentage into simple decimal fraction.

(i) $33\frac{1}{3}\%$ (ii) 150%

Solution

(i) $\frac{100}{3}\%$

$= \frac{100}{3} \times \frac{1}{100}$

$= \frac{1}{3}$

$= 0.33$

(ii) 150%

$= 150 \times \frac{1}{100}$

$= \frac{150}{100}$

$= \frac{3}{2} = 1.5$

Exercise 15.2

1. Convert the given fraction numbers into percentage.
   (i) $\frac{3}{4}$ (ii) $\frac{7}{9}$ (iii) $\frac{14}{15}$ (iv) $3\frac{1}{3}$
2. Convert the given decimal fractions into percentage.
   (i) 0.84 (ii) 1.25 (iii) 0.875 (iv) 0.001
3. Convert the given percentage into simple fraction.
   (i) 52% (ii) 125% (iii) $6\frac{1}{4}\%$ (iv) $33\frac{1}{3}\%$
4. Find
   (i) 15% of 320 (ii) 35% of 875 (iii) 20% of 1250 gm. (iv) 16% of 32.5 m.
5. Find
   (i) 42% of what is 63. (ii) 70% of what is 35. (iii) 13% of what is 1170.

6. Convert the given percentage into decimals.
(i) 7% (ii) $1\frac{2}{5}\%$ (iii) 0.03% (iv) 16.7%

7. Out of 500 students 85% are girls in a school. Find the number of boys in the school.

8. During Green Rajasthan Campaign trees were planted in Akola village of Rajasthan out of which 10% of the trees dried. If 1800 trees are left here then how many trees were planted in the beginning?

9. 950 votes were casted at an election booth out of which 57 votes were rejected. If 1045 names of voters were registered in the voter list then what percentage of polling was done?

10. On the occasion of Shaheed Diwas, 28 members of out fo 35 members of Subhash Club donated blood. Similarly 38 out of 40 members of Tilak Club donated blood. which club members donated more percentage of blood?

15.3 Percentage Gain- Percentage Loss

In a town the rates of certain commodities in two years at Rohit Traders were as follows :

Cost Per Kg. / Commodities	On 1.4.2014	On 1.4.2015
Sugar	30	27
Groundnut Oil	90	81
Wheat	13	15
Parmal Rice	28	32

Discuss the change in rates of commodities by seeing the above table. You will find that the rates of sugar and groundnut oil are reduced by Rs. 3 and Rs. 9 respectively. Whereas the rates of wheat and parmal rice have increased by Rs. 2 and Rs. 4 respectively. From these data you will feel that the rate of groundnut oil has decreased more and the rates of parmal rice increased more. If this type of change is expressed in percentage, then we can show the change in more correct way.

Commodity	Change in rate		Change	In percentage
	The Later value	The initial value		
Sugar	27	30	-3	-10%
Groundnut Oil	81	90	-9	-10%
Wheat	15	13	2	$15\frac{5}{13}\%$
Parmal Rice	32	28	4	$14\frac{2}{7}\%$

$$\text{Change in rate in percentage} = \frac{\text{change}}{\text{Initial value}} \times 100$$

For sugar – $\frac{-3}{30} \times 100 = -10\%$

For groundnut oil – $\frac{-9}{90} \times 100 = -10\%$

For wheat – $\frac{2}{13} \times 100 = 15\frac{5}{13}\%$

For parmal rice – $\frac{4}{28} \times 100 = 14\frac{2}{7}\%$

It is clear that loss/ reduction in rates of sugar and groundnut oil are same in percentage. Similarly growth in percentage of rates of wheat is more than parmal rice.

Do and Learn

1. The population of a village is increased to 15000 from 12000 in last 10 years. Then what is the percentage growth of population?
2. Express rate of growth or loss in the form of percentage in the following:
   (1) The cost of electricity per unit has increased to Rs 6 from Rs. 3.50.
   (2) The cost of 100 envelopes has decreased to Rs. 80 from Rs 100.

15.4 Profit-Loss

Sumitra and Savitri bought 20 kgs. of bananas each from wholesale market and shopkeeper respectively at the rate of Rs. 20 and Rs. 25 respectively and both sell them at the rate of Rs. 22. Who will gain and who will bear loss.

Sumitra bought 20 kg. bananas for Rs. 400 at the rate of Rs. 20 per kg.

i.e C.P. of bananas bought by Sumitra $= 20 \times 20 = Rs.400$

C.P. of bananas bought by Savitri $= 25 \times 20 = Rs.500$

Both sold the bananas at the rate of Rs. 22

S.P. $= 22 \times 20 = Rs.440$

Sumitra's selling price is more than her buying i.e. C.P.< S.P. So she books profit.

Savitri sold the items in lesser price than her buying price i.e. S.P.>C.P. So she bears loss.

Sumitra earned Rs. 440-400 = Rs. 40

Therefore profit of Sumitra

= S.P.-C.P. = 440 - 400 = Rs. 40

And loss to Savitri = C.P. – S.P.

= 500 - 440 = Rs. 60

Now, see by expressing their profit / loss into percentages i.e. per hundred.
Sumitra earned profit on Rs. 400 = Rs. 40

Hence profit on Rs.1 = $\frac{40}{400}$

Or profit on Rs.100 = $\frac{40}{400} \times 100$

Hence profit = 10%

Now, see by expressing their profit / loss into percentages i.e. per hundred.

i.e. profit percentage = $\frac{\text{Profit}}{\text{C.P.}} \times 100$

Savitri gets loss on Rs. 500 = Rs. 60

Hence loss on Rs. 1 = $\frac{60}{500}$

or loss on Rs. 100 = $\frac{60}{500} \times 100 = 12\ \%$

i.e. loss percentage = $\frac{\text{Loss}}{\text{C.P}} \times 100$

Customer What is the price of table and stool?
Chhagan On seeing the bill- Rs. 750
Shopkeeper Karma arrives after the customer goes. When he comes to know about the matter, then.
Karma Oh! You sold this item in loss.
Chhagan No Dad, How can it be ? I have seen the bill , the price of one set was Rs. 700.

Karma - look, When I went to purchase 10 sets of these articles then I gave Rs. 200 as bus and taxi fare, Rs. 100 as labour for lifting, Rs. 250 as truck fare.

Chhagan Yes Daddy, it means we spent 200 +100 + 250 = Rs. 550 on these articles.

Karma That's why I am telling you, the price of these articles for us-
For 10 sets at the rate of Rs. 700 per set = Rs. 7000
And other overhead expenses = Rs. 550
Then total cost price = C.P. + overhead expenses
= Rs. 7000 + Rs. 550
= Rs. 7550

Chhagan It means that total price of a set is Rs.755, while I sold a set in Rs. 750 then there is a loss of Rs. 5 to us.

Karma If we want to earn Rs. 50 on one set then at what price it should be sold?

Chhagan Total C.P. Rs. 755 + profit Rs. 50 = Rs. 805 should have been the selling price.

Therefore to determine the S.P. of an article, some additional expenses like amount spent, labour charge,transportation etc. are included in the cost price.

Do and Learn

1.Mahaveer bought 5 bags of sugar for Rs. 16000. He spent Rs. 200 for taxi fare, Rs. 120 for labour charges and Rs. 200 for transportation charges. Find the selling price of per kg. of sugar so as to earn a profit of Rs. 3 on each kg.

2. Manoj bought a second hand car for Rs. 1,50,000. He spent Rs. 60,000 on its engine repair and Rs. 15000 on replacing the tyre tubes. Manoj sold this car to Jitendra for Rs. 2,10,000. Calculate loss or gain in this business.

Example 9 Prem bought a sewing machine for Rs. 4800 and sold it for Rs. 5400. Find his gain percent.

Solution C.P. of sewing machine = Rs. 4800
S.P. of sewing machine = Rs. 5400
Profit = 5400-4800 = Rs. 600

$$\text{Profit percentage} = \frac{\text{Profit}}{\text{C.P.}} \times 100$$

$$\text{Profit percentage of Prem} = \frac{600}{4800} \times 100 = \frac{25}{2}$$

$$\text{Hence profit} = \frac{25}{2}\% = 12\frac{1}{2}\%$$

Example 10 Raheem bought a house for Rs. 1,40,000. He spent Rs. 14,000 on its registration, brokerage etc., Rs. 7000 in plumbing, Rs.1700 in repairing electric wires and Rs. 8300 for other repairing works. If he sold this house for Rs. 2,03,490 then find his gain percent.

Solution

Raheem bought the house = Rs. 140000
Registration charges = Rs. 14000
Plumbing cost = Rs. 7000
Repairing electric wires = Rs. 1700
Other repairs = Rs. 8300

Total overhead expenses = 14000+ 7000+1700+8300= Rs.31,000 Real

C.P. of house = 140000+31000 = Rs. 171000

S.P. of house = Rs. 2,03,490

Profit = S.P.-C.P.
= 203490-171000
= Rs.32,490

$$\text{Profit percentage} = \frac{\text{Profit}}{\text{C.P.}} \times 100$$

$$\text{Profit percentage} = \frac{32490}{171000} \times 100 = \frac{3249}{171} = 19\%$$

Hence profit percentage = 19%

Example 11 A football club got victory in 12 matches this year whereas last year it won 15 matches. What is the loss or gain percent as compared to last year?

Solution Reduction in number of victories = 15-12 = 3

$$\text{Percentage reduction} = \frac{\text{Reduction}}{\text{Win in base year}} \times 100$$

$$= \frac{3}{15} \times 100$$

The number of victories reduce by 20%.

Exercise 15.3

1. Kishor bought a chair for Rs. 450 and sold it for Rs. 500. Find Kishor's gain percentage.
2. Find gain or loss in following transactions of buying and selling. Find gain or loss percent in each case.
   (i) One bicycle was purchased for Rs. 3500 and sold for Rs. 3000.
   (ii) One washing machine was purchased for Rs. 15000 and sold for Rs. 15500.
   (iii) A toy car was purchased for Rs. 450 and sold for Rs. 540.

(iv) Arvind bought a T.V. for Rs. 12000 and sold it for a profit of 15%. How much money is obtained on selling T.V.?

3. If the population of a town increases to 26500 from 25000 then find the percentage growth in population.
4. A businessman bought 50 kilograms cereal for Rs. 2000. He spent Rs. 400 on its cleaning. The value of cereal decreased in market due to high supply. He sells it for Rs. 41 per kg. Find his percentage gain or loss.
5. Shravan mechanic bought an old scooter for Rs. 5500. He spent Rs. 150 in its transportation and Rs. 550 on its repair. If he wants to earn 15% gain on it, then at what price should he sell the scooter?

15.5 Simple Interest

Ashok borrows Rs. 50,000 from an institute for the construction of his house. This borrowed amount is known as Principal. He repays Rs. 55,000 to that institute after one year.

Ashok paid Rs. 5,000 extra on Rs. 50,000. This extra amount is known as interest.

The amount of interest depends on following things:-

1. Amount borrowed (Principal)
2. Time (Period for which the amount is borrowed)
3. Rate (The extra amount paid on per hundred) which is determined on the basis of per month / per annum.

You can find the amount you have to pay at the end of the year by adding sum borrowed and the interest

i.e. Amount = Principal + Interest

Do and Learn

1. How much interest would Ashok have pay after 2 years if he was not able to return the money to the institute after1 year?
2. How much money in total has to be paid including interest?

The value of simple interest increases or decreases with increase or decrease in principal, time and rate of interest respectively.

The formula for simple interest can be expressed as follows

Simple interest = Principal × Time × Rate Per 100

$$\text{Simple interest} = \text{principal} \times \text{time} \times \frac{\text{Rate}}{100}$$

" mooll, ver aru kaal ka kanchan guna karay, ek sau se bhaag diye byaaj turant batlaya mathematician kanchan gave this 'shloka' for calculating simple interest.

Example 12 Ashok borrowed Rs. 20,000 for 3 years from a nationalized bank at the rate of 10% simple interest then what amount will he pay for interest and what total amount will he return?

Solution Amount borrowed (Principal) = Rs. 20,000

Rate of interest = 10%

Time = 3 years

Interest on Rs. 100 for 1 year = Rs. 10

Then interest on Rs. 1 for 1 year = Rs $\frac{10}{100}$

Interest on Rs. 20,000 for 1 year = $\frac{10}{100} \times 20{,}000$

Interest on Rs. 20,000 for 3 years = $\frac{10}{100} \times 20{,}000 \times 3$

Simple interest = $\frac{10}{100} \times 20{,}000 \times 3$ = Rs. 6,000

Amount returned with interest

Amount = amount borrowed + interest

Amount = principal + interest

= Rs. (20000 + 6000)

= Rs. 26,000

Example 13 Chhoga borrows a loan of Rs. 8,000 at 12% annual rate on simple interest. Find out how much amount he will repay after 1 year?

Solution

Amount borrowed = Rs. 8000

Rate of interest = 12% per year

If he borrows Rs. 100 then simple interest for 1 year = Rs. 12

If he borrows Rs. 1 then simple interest for 1 year = Rs. $\frac{12}{100}$

If he borrows Rs. 8000 then simple interest for 1 year = Rs. $\frac{12}{100} \times 8000$

= Rs.960

amount (including simple interest after 1 year = principal + interest

= 8000 + 960

= Rs. 8960

$$\text{Or simple interest} = \frac{\text{principal} \times \text{time} \times \text{rate}}{100}$$

$$= \frac{8000 \times 1 \times 12}{100}$$

= Rs. 960

Amount = Principal + Interest

= 8000 + 960 = Rs. 8960

Example 14 If simple interest is Rs. 450 in 3 years at the rate of 10% then find the principal amount.

Solution

Given the rate = 10% , time = 3 years, interest = Rs. 450, principal = ?

$$\text{Simple Interest} = \frac{\text{Principal} \times \text{Time} \times \text{Rate}}{100}$$

$$450 = \frac{\text{principal} \times 3 \times 10}{100}$$

$$450 = \frac{\text{principal} \times 3}{10}$$

$$\text{Principal} \times 3 = 450 \times 10$$

$$\text{principal} = \frac{450 \times 10}{3}$$

principal = Rs. 1500

Exercise 15.4

1. Lalji took the loan of Rs. 1500 from a bank to buy a cow. He repaid the loan with interest Rs. 120 after 1 year. Find how much amount was paid by Lalji?
2. Rani takes a loan of Rs. 4000 at 12% annual rate of interest from Mahila Cooperative Bank for buying a sewing machine. Find that how much amount Rani has to pay in 1 year.
3. A sum of Rs. 3500 is borrowed at the 8% rate of interest on simple interest. After 2 years, how much amount due after 2 years?
4. At which rate of interest on Rs. 4500 after 2 years Rs. 360 will be due as simple interest?
5. Ravindra paid Rs. 320 after 1 year as simple interest at 8% annual rate. How much amount he borrow?

We Learnt

1. We are often required to compare 2 quantities in our daily life. They may be height, weight, salaries, marks etc.
2. A way of comparing quantities is percentage also. Percentages are numerator of fraction with denominator 100. Percentage means per 100.
3. Fractions can be converted to percentage and parentage can be converted into fractions.
4. Percentage is widely used in our daily life.
   (i) When part of a quantity is given, then we can find the value of whole quantity.
   (ii) When parts of a quantity are given to us as ratios , we have seen how to convert them to percentage.
   (iii) The increase or decrease in a quantity can also be expressed as percentage.
   (iv) The profit or loss incurred in a certain transaction can be expressed in terms of percentage.
   (v) While computing the interest on an amount borrowed the rate of interest is given in terms of percentage.