

There was a tailor named Vijay. He had a daughter, Soni. Vijay wanted her daughter to be well educated. Vijay worked very hard and collected rupees 10000 for his daughter's education and upbringing. Vijay thought to deposit this amount in the bank for its safety. Next day, Vijay went to the bank and deposited rupees 10000 in the bank.

Three years passed. In the meantime, Soni studied very hard and now for further education she had to take admission in a college. Vijay required money for Soni's admission. Vijay recalled that three years back he had deposited 10000 rupees in the bank.



Vijay went to the bank with Soni to take his money back. When Vijay withdrew his money from the bank, instead of 10000 rupees bank gave him 11500 rupees. Vijay thought, why has he got $11500 - 10000 = 1500$ rupees more!

To enquire Vijay and Soni went to the bank manager—

Vijay — Sir, I had deposited 10000 rupees and after three years I have received ₹ 11500. Why have I got 1500 rupees more?

Manager— The 10000 rupees deposited by you is the **principal**. 1500 rupees is

the interest on the amount deposited by you. When any person deposits money in the bank, then after a certain period, bank gives some extra money along with the amount deposited which is called **interest**.

Vijay — Sir! How do we calculate the amount of the interest ?

Manager— To calculate the interest we find out the rate of interest. The term of giving extra amount per 100 rupees, fixed by the bank is called the **rate of interest**. The rate of our bank is 5% per annum which means on every 100 rupees it is 5 rupees every year.

Soni — That means for our 10000 rupees bank has given us 5 rupees extra per 100 rupees which is the interest.

Manager— Well done! You understand it correctly. The money 11500 rupees which your father got is called the **amount**. Now please tell, what all money is included in the amount.

Soni — We get amount by adding principal and interest.

$$\text{Amount} = \text{Principal} + \text{Interest}$$

Manager— Well done!

Vijay and Soni — Sir! Thank you for explaining us the whole thing.

We have seen —

Total money deposited by Vijay in the bank = Principal = 10000 rupees
 Rate = 5%
 Time = 3 years

Interest given by the bank in 1 year per 100 rupees = 5 rupees

Therefore, bank will give interest on 1 rupee = rupee

$$\begin{aligned} \text{Hence, interest on 10000 rupees} &= \frac{5}{100} \text{ rupees} \\ &= \frac{10000 \times 5}{100} = 500 \end{aligned}$$

We get rupees 500 interest in 1 year, so we will get $500 \times 3 = ₹ 1500$ interest in 3 years.

Principal = 10000 rupees

Interest of 3 years = 1500 rupees

Hence, the amount = 10000 + 1500 = ₹ 11500



Let's understand this too —

To get the interest, we divide the product of principal, rate and time by 100 —

Principal = 10000 rupees

Rate = 5%

Time = 3 years

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

$$\text{Simple Interest} = \frac{10000 \times 5 \times 3}{100} = 1500$$

$$\begin{aligned}\text{Amount} &= \text{Principal} + \text{Interest} \\ &= 10000 + 1500 = ₹ 11500\end{aligned}$$

Word problems

Example 1 : If the interest of 100 rupees for 1 year is 4 rupees, what will be the interest for 6 years ?

Solution : Principal = ₹ 100

Time = 6 years

Rate = interest on 100 rupees for 1 year = 4%

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

$$= \frac{100 \times 4 \times 6}{100} = 24$$

Hence, the interest of 6 years on 100 rupees will be 24 rupees.



Example 2 : Janardan borrowed 500 rupees from Rajveer at the annual interest rate of 15%. After 5 years, how many rupees will Janardan return to Rajveer?

Solution : Principal = 500 rupees

Rate = 15%

Time = 5 years

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

$$= \frac{500 \times 15 \times 5}{100} = 375$$

Simple Interest = 375 rupees

The money that Janardan will return to Rajveer after 5 years will be the amount.

We know that, Amount = Principal + Interest

$$= 500 + 375 = ₹ 875$$

Hence, Janardan will return total 875 rupees to Rajveer.

Example 3 : Sujeet borrowed 50000 rupees from a bank at the annual interest of 10% for the construction of his house. Tell, how much money will Sujeet return to the bank after 4 years?

Solution : Principal = 50000 rupees

Rate = 10%

Time = 4 years

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

$$= \frac{50000 \times 10 \times 4}{100} = 20000$$

Simple Interest = 20000 rupees

Amount = Principal + Interest

$$= 50000 + 20000$$

$$= ₹ 70000$$

Hence, Sujeet will return 70000 rupees to the bank.



We have learnt

- The money which is deposited or taken as a loan from the bank is called principal.
- The money which is fixed per 100 rupees of the principal by the bank is called the rate of interest.
- The extra money received on principal after a certain period of time is called the interest.
- $\text{Amount} = \text{Principal} + \text{Interest}$ or $\text{Principal} = \text{Amount} - \text{Interest}$
or $\text{Amount} - \text{Principal} = \text{Interest}$
- $\text{Simple interest} = \frac{\text{Principal} \times \text{Rate} \times \text{Time}}{100}$
- To calculate the principal, interest and the amount in the given problem.

Exercise

1. Calculate the interest –
(a) Principal ₹ 700, rate 5%, time 2 years
(b) Principal ₹ 1000, Amount ₹ 1250
2. Dinesh took a loan of 15000 rupees from a bank for the construction of a toilet at the yearly interest rate of 15%. How much money Dinesh will have to return after three years ?
3. Mathura took a loan of 16000 rupees from a bank at the yearly interest rate of 10% to setup a shop. After 2 years how much money will he has to return? At present Mathura has 15000 rupees, how much more money does he need to return the loan ?
4. Zubaida took a loan of 4000 rupees at the yearly interest rate of 12% to buy a sewing machine. How much money will she has to return after three years ?





1. Write the greatest and the smallest five digit number from the 8, 0, 6, 0, 1. Except zero no other digit should be repeated.
 2. Find out the H.C.F. of the given numbers —
(a) 32, 48 (b) 21, 35
 3. Find the greatest number by which 15, 30 and 45 can be divided exactly.
 4. From a basket of flowers 18, 40 and 48 garlands can be prepared without leaving any flower. Find the minimum number of flowers which are there in the basket.
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5. Find the value —
(a) $2\frac{3}{5} \times \frac{5}{26}$ (b) $10\frac{5}{6} \times 1\frac{1}{5} \times \frac{5}{7}$ (c) $\frac{28}{25} \div \frac{7}{5}$
 6. Convert the following fractions into decimals —
 $\frac{7}{10}, \frac{29}{10}, \frac{31}{10}, \frac{43}{1000}$
 7. Convert the following decimal numbers into fractions —
(a) 0.2 (b) 0.05 (c) 0.625 (d) 1.25
 8. Find the value -
(a) $.023 \times 100$ (b) 1.541×1000
 9. A shopkeeper got a profit of 8% at the expense of 500 rupees. How much profit did he gain ?
 10. Write $\frac{3}{4}$ in percent.



11. Fill in the blanks in the given table –

	Cost Price (in Rs.)	Selling Price (in Rs.)	Profit (in Rs.)	Loss (in Rs.)
(a)	1200	1290		
(b)	500		80	
(c)		12818		182

12. Find the simple interest of ₹ 750 at the yearly interest rate of 5% in 3 years.

13. Simplify –

(a) $112.48 + 72.84$

(b) $149.85 - 12.08$

(c) $526880 \div 32$

(d) 598292×267

14. The cost of 15 books is ₹ 85.50. What will be the cost of 37 such books ?

(a) 555 rupees (b) 210.90 rupees (c) 2843.50 rupees (d) 2109 rupees

The Great Mathematician

Bhaskaracharya I

Bhaskaracharya I is considered to be the first one to write the Hindi Arabic Decimal Number System. He has written 3 books on the works of Aryabhatta.

