"PERCENTAGE"

Tricks to solve Percentage Problems

प्रतिशत सम्बन्धि प्रस्न चाडै समाधान गर्ने तरिका :

Trick -1 : Percentage is a fraction whose denominator is always 100. x percentage is represented by x%.

To express x% as a fraction :

We know

x% = x/100

For Example: 10% = 10/100 (means 10 parts out of 100 parts)

= 1/10 (means 1 part out of 10 parts)

To express x/y as a percentage :

We know that ,

x/y = (x/y× 100)

Example: 1/4 = (1/4 ×100)% = 25%

and 0.8 = (8/10 ×100)% = 80%

Trick-2: If the price of a commodity increases by R%, then reduction In consumption as not to increase the expenditure is-

[R/(100+R)×100] %

If the price of a commodity decreases by R%, then the increase in consumption as not to decrease the expenditure is - **[R/(100-R)×100] %**

Trick-3: Result on Population :

Let the population of a town be P now and suppose increases the rate of R% per annum, then :

1. Population after n years = **P (1+ R/100)n**
2. Population n years ago = **P /(1+ R/100)n**

Trick-4 : Result on Depreciation :

Let the present value of a machine be P. Suppose depreciates at the rate of R% per annum Then :

1. Value of the machine after n Years = **P (1- R/100)n**
2. Value of the machine n years ago = **P /(1- R/100)n**

- If A is R % more than B, then B is less than A by [R/(100+R)×100]%
- If A is R% less than B, then B is more than A by [R/(100-R)×100]%
- Net % change = x + y + xy/100

Solved Example In English

1. If the difference between 62% of a number and 3/5th of that number is 36. what is the number ?

Solution :

Let the number be x.

Then x × 62% - x × 3/5 = 36

x × 62% - x V 60% = 36 (60% = 3/5)

x × 2% = 36

x × 2/100 =36

x = 36 ×100/2 = 1800

2. In a election between two candidates (Ram and Shyam), the one candidate (Ram) who gets 40% votes is rejected by a majority of 360 votes. Find the total no. of votes polled ?

Solution :

(60% - 40% =) 20% = 360

So , 100% = 360/20×100 = 1800.

3. Due to fall in manpower, the production decreased by 25%. By what percent should the working hour be increased to restore the original Production ?

Solution :

Production = Manpower × Working Hour

Decrease in Production = Decrease in Manpower

Let Manpower = 100 units and Working Hour = 100 units, Suppose working hours increase by x %.

Then, (100-25) (100 + x) = 100 × 100

100 + x = 400/3

x = 100/3 ; x = 331/3%

4. 40% of Ram's income Rs. 1200 Then Find:

1. 75% of Ram's income ?

2. 1/4 part of Ram's income ?

3. 1/3 part of Ram's income ?

Solution :

(1)40% = 1200 Rs.

75% = 1200/40 ×75 = 2250 Rs.

Trick : 1200 / 40 × 75 = Rs. 2250/-

(2) 40% of income = Rs. 1200

Then 1/4 part (i.e. 25%) of Ram's
income = 1200/40 ×25 = Rs. 750/- Ans

(3) 40% of Ram's income = Rs. 1200
i.e. 2/5 part of Ram's income = Rs. 1200
Then total income of Ram = Rs. 1200 ×5/2
1/3 part of Ram's income
= Rs. 1200 × 5/2 × 1/3
= Rs. 1000 Ans.

Trick : 1200/2/5 × 1/3 = 1200/2 × 5/3 = 1000

5. Which value is greater '30 out of 40' and '40 out 50' .

Solution:

30/40 = 30/40 × 100% = 75%
40/50 = 40/50 × 100% = 80%
40 out of 50 is greater.

Previously Asked Questions:

1. भोजले 150 पूर्णाङ्कको अंग्रेजीमा 80% अंक , 120 पूर्णाङ्कको रसायनशास्त्रमा 70% र 130 पूर्णाङ्कको भौतिकशास्त्रमा 90 प्रतिशत अंक ल्याएछ भने, उसले पाएको जम्मा अंकको प्रतिसत कति होला ? (NRB assistant 2066)

Solution :

भोज अङ्ग्रेजिमा ल्याएको अंक =150 को 80%
=150 ×80/100
= 120

भोजले रसायनशास्त्रमा ल्याएको अंक = 120 को 70%
= 84

भोजले भौतिकशास्त्रमा ल्याएको अंक = 130 को 90%
= 117

भोजले जम्मा प्राप्त गरेको अंक = 120+84+117 =321

उसले पाएको जम्मा प्रतिशत = 321/400 × 100%
= 80.25%

2. रामले आफ्नो आम्दानीको 75 प्रतिशत खर्च गर्छ ।उसको आम्दानी 20 प्रतिशत र खर्च 10 प्रतिशतले वृद्धि हुँदा उसको बचत प्रतिशत कति होला ?(नेपाल राष्ट्र बैंक 2067)
3. 60 जना विद्यार्थीमध्ये 45 जनाले 70 अंक भन्दा बढी पाए भने कति प्रतिशत विद्यार्थीले 70 अंकभन्दा कम अंक पाए ? (RBB 2074)
4. निर्वाचनमा कुनै एक उम्मेदवारले कुल सदर मतको 75 प्रतिशत मत प्राप्त गरे। यदिकुल मत 5 लाख 60 हजार थियो र 15 प्रतिशत मत बदर घोषित भएको थियो भने उमेदवारले कति मत प्राप्त गरे ?(RBB 2074)
5. एकजना पसलेले 600 वटा सुन्तला र 4 सय वटा केरा किन्यो। त्यसमा 15% सुन्तला र 8 प्रतिशत केरा बिग्रिएका थिए । राम्रो अवस्था भएका फलफूल प्रतिशत निकाल्नुहोस ।(RBB 2074)

6. तरकारीको भाउ 25 प्रतिशतले वृद्धि हुँदा उपभोक्ताले आफ्नो खर्च यथावत राख्र तरकारीको उपभोगमा कति प्रतिशतले कमी गर्नुपर्ला ?

Solution:

Decrease in Consumption = % price increase/(100+%price increase)× 100