AILET

How To Solve Percentage Questions in CLAT 2020

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Percentage in itself is although a very basic concept of Mathematics and often we tend to not pay much attention to it because we are confident that we can solve it. Percentage is that concept in Quantitative techniques that is used for such vast purposes that it can be as basic as it finds place in our daily lives and as useful as in the complex engineering experiments.

But always remember! Knowing how to solve isn't enough, you must know how to solve it in minimum time. With the changed pattern of CLAT UG this year, the quantitative technique questions now are more in the form of Data Interpretation and therefore you'll have to be faster in solving the data interpretation questions that would involve basic arithmetic concepts.

In this post, we will be dealing with the concept of Percentage and some formulas on how to solve it faster and more efficiently. So let's get started,

The meaning of the word 'Percent' can be rooted in its origin. Percent has been derived from the Latin word Per Centum which means per hundred. Cent is usually used to denote 100 and therefore the word' century' meaning 100 years. Other words like cent, centimetre, and centipede etc. root from the same source.

Therefore, we can say that Percentage is a relative value that represents the hundredth part of a countable quantity. In simple words, 'per 100 items' of anything. It basically represents a fraction of the whole.

The formula for calculating the percentage is

Percentage = (Part/whole) * 100

To understand any mathematical concept, the way of illustrations is the best one. So, let us look at an example to understand what we have read till now.

Illustration 1: Arush has a sack filled with different types of fruits that are a total of 1000 pieces. Out of these 1000 fruits, there are 200 Oranges, 250 Peaches, 300 bananas, 100 Kiwis and 150

Apples. Let's try calculating the percentage of each fruit in the sack.

Solution: To find the percent of each fruit, we need to understand the difference between 'whole' and 'part'. Here, the sack with 1000 fruits denotes the 'whole' and the parts are no. of each fruit. The next step is to find the fraction of each fruit. For this, remember, the 'whole' is always in the denominator i..e. 1000 in this case and the 'part' is always in the numerator. Therefore,

Fraction of Oranges = part/ whole = 200/1000 = 1/5

Fraction of Peaches = 250/1000= 1/4

Fraction of Bananas = 300/1000 = 3/10

Fraction of Kiwis = 100/1000= 1/10

Fraction of Apples = 150/1000 = 3/20

The next and the final step is to calculate the Percentage using the formula stated above:

Therefore Percentage of Oranges = (1/5)* 100 =20%

Percentage of Peaches = (1/4)* 100 = 25%

Percentage of Bananas= (3/10)*100 = 30%

Percentage of Kiwis= (1/10)* 100 = 10%

Percentage of Apples = (3/20) * 100 = 15%

Now, to check if your answer is correct, you can verify it by adding all the percent and if the answer is 100, your answers are right.

Therefore, (20+ 25+ 30+ 10+ 15) % = 100%

Hence verified.

Now, when you have understood the basic concept of Percentage, you need some tool that can make you solve questions faster in the exam and help you save time to invest on other questions and also in analysing the Data interpretation tools like Pie charts, Bar graphs, Line graphs etc. as the case may be.

As a tool in Quantitative Techniques, nothing can beat the list of the formulas. So practice the questions using these formulas to have better retention of it in your brain.

1. Percentage = (Part/whole) * 100

We have already solved the Illustration above using this formula.

1. Suppose if you want to convert a percent term (z%) and express that in the form of a fraction, you can do so by just dividing the term by hundred. Therefore, the formula is :

z%= (z/100)

To find the exact no. of z item

No. = (z/100) * whole

Illustration 2: Suppose Amit says that he has a box with 300 pencil and 25% pencils are Nataraj Pencil. Calculate the no. of Natraj Pencils.

Solution: You can easily convert it into fractions and also determine the exact no.of Nataraj Pencils. Using the formula above i.e. z%= (z/100) * whole, it means that there are z Natarajan pencils per 100 pencils, therefore in this case, 25 Nataraj pencils per 100 pencils. But here 'whole' = 300 pencils

Therefore, No. of Nataraj Pencils = (z/100) * whole,

= (25/100) * 300

= 75 pencils

1. If X is m% more /less than Y, then Y is 100m/(100 + m) % less/more than X.

Illustration 3: Suppose 150 is 50% more than 100, then by how much percent is 100 less than 150.

Solution: Just apply the formula as it is

Here, m = 50

X = 150

Y = 100

Therefore 100m/(100 + m) = 100 * 50/ (100+50) = 33.33 %

It also means that 100 is 66.67 % of 150.

Now, there are times when in a question there are two variables and on the basis of change in one you are expected to find out the change in other to retain the balance.

Like in the case of the cost of a commodity and its consumption where the total money spent remains constant.

1. Suppose the price of a commodity decreases by m%, the percent by which consumption should go up to keep the total money spent i.e. expenditure unchanged or constant = [m/(100-m) *100] %

Illustration 4: The Price of a kilogram of Apples decreases by 50 %. By what percentage should we increase the consumption to keep the expenditure constant?

Solution: Apply the formula as it is:

The percentage by which the consumption should go up to keep the expenditure constant = [m/(100-m) *100] %

= [50/(100-50) *100] %

= 100%

Therefore, it means that quantity will increase by 100% i.e. will be doubled

1. Suppose the price of a commodity increase by m%, the percent by which consumption should reduce to keep the total money spent i.e. expenditure unchanged or constant = [m/(100+m) *100] %

Illustration: The Price of Maggi Instant Noodles increases by 20 %. By what percentage should we reduce the consumption to keep the expenditure constant?

Solution: Apply the formula as it is:

Here, m = 20

The percentage by which the consumption should reduce to keep the expenditure constant = [m/(100+m) *100] %

= [20/(100+20)*100]%

= 16.66%

I hope now the concept of Percentage will be clear to you and you will not just be able to solve the questions, but solve them accurately and faster.

Keep Practicing!

Read the theory on Simple and Compound Interest here.

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