A cone’s volume is described as the quantity of area or volume it currently takes. The volume of the cone formula is determined in volumetric units such as mm in diameter, cubic metres, etc. Any side of a triangle can be twisted to generate a cone. A cone is a rigid tri-form having a circular bottom. This has a curved surface. The vertical length is the gap between both the bottom and the apex. Aspherical cones or angled cones are two kinds of funnels. The apex of a conic section is vertical just above the bottom of the specimen, while the apex of an angled cone isn’t vertically.

The volume of Cone Formula

One among the sum of the volume of the round bottom and the elevation of the cone represents the volume of a cone. As per algebraic and analytical ideas, a cone can be characterised as a tower surrounding a central bridge. One may easily determine the volume of a cone by examining its elevation and width. The volume of a cone formula is given by V = (1/3) pi *r^2*h when the radius of the base of the cone is “r” and the height of the cone is “h.”

Cone Volume vs Height & Radius

V = (1/3) pi*r^2*h cubic units are the procedure for determining the volume of a cone considering its height and bottom radius.

Cone Volume vs Height and Width

V = (1/12) pi*d^2*h cubic units are the method to calculate the volume of a cone provided its elevation and base diameter.

Cone Volume with Slant Altitude

One could evaluate the correlation between the area and slant elevation of the cone by using the Pythagoras theorem.

We know that h^2 + r – square = L^2 and that h = ($L^2 – r^2$)

The elevation of the cone is h, the radius of the bases is r, and the slant height is L.

V = (1/3) pi*r^2*h = (1/3) pi*r^2*√($L^2 – r^2$).

Volume of Cone Formula of Partial Cone

The volume of a partial cone, V = 1/3 pi *h*(R^2 + Rr + r^2), is the volume of a cone formula for an incomplete cone. Small ‘r’ and capital ‘R’ are the base radii in the formula, with R > r, and ‘his’ the elevation.

The volume of a cone can be estimated using the volume of cone formula given the relevant aspects. When the bottom radius or the base diameter, altitude, and slant height of the cone are available, the procedures described below can be performed.

Step 1: Write down the given variables: ‘r’ indicates the radius of the cone’s bottom, ‘d’ indicates the diameter, ‘L’ denotes the slant height, and ‘h’ denotes the height.

Step 2: Use the method to calculate the volume of the cone.

Cone volume based on basal radius: V = (1/3) pi *r^2*h or (1/3) pi*r^2*sqrt ($L^2 – r^2$)

V = (1/3) pi *r^2*h or (1/3) pi*r^2*sqrt (L^2– r^2)

Volume of cone using base diameter: V = (1/12) pi*d^2*h = (1/12) pi*d^2*sqrt ($L^2 – r^2$)

Step 3: Convert the value to cubic metres.

The volume of Frustum Cone

Whenever the upper or lower half (including the peak) is divided by a direction parallel to its bottom, it is considered a frustum. The volume of a frustum cone relates to the quantity of area it includes. A frustum’s volume can be estimated by multiplying its elevation ‘H’ by its bottom regions S 1 and S 2. The equation for determining the frustum’s volume (V) is:

V = H /3 (S 1 + S 2 + sqrt S 1 S2)

The volume of a frustum cone can be determined via one of two formulas. Imagine a frustum with radii ‘R’ and ‘r’ and a height ‘H’ created by a cone with a bottom radius of ‘R’ and a height of ‘H + he. The capacity (V) may be estimated by applying the formula:

$V = pi*h/3* [(R^3 – r^3) / r] (OR)$

$V = pi*H/3 *(R^2 + Rr + r^2)$

How to Multiply a Decimal Fraction:

In order to multiply a decimal fraction, we need to follow some important steps as follows –

First, we need to count the decimal places of each given number.
Then, place each of the decimal numbers starting from right to left.
Here, we are given 0.23 x 50.26 to solve:

So now, our first step will be to write it down in a correct manner as follows:

0.23

x 50.26

The above-given format is like, before the decimal, the units place of one number should be placed exactly under the units place of the second given number.
While, after the decimal point is like, the number should be placed in their increasing number of places.

Because, before the decimal point, numbers are considered as the numerator for a fraction. While, after the decimal point, numbers are considered denominators for a fraction.
We’ll learn how to determine the decimal number multiplied by another decimal number by performing a multiplication operation.

A decimal number multiplied by another decimal number is equivalent to a decimal number. When we are multiplying two decimal numbers, first we need to ignore their decimal place and multiply them in general. Then, the decimal point is inserted into the product such that the product's decimal places match the total of the provided numbers' decimal places.

Few tricks to solve the questions:
Eliminate the decimals from the numbers, then multiply the two whole numbers. Write down the product as it is and don't bother about the decimal.
Count the no. of digits after the decimal on both the numbers and add them. Let the resulting number be 'n'. After that, place a decimal point leaving 'n' digits.
Remember that If you want to count digits, start from a number's unit place.
Let us consider the subsequent example of the multiplication of a decimal number by a decimal number.

a) 1.2 x 1.2
We are going to perform multiplication and ignore the decimal mark.

12

x 12

24

+ 120

144
Now we get 144 as the answer
Now add the decimal mark and from the right-hand side skip that many places in the product.

Therefore, 1.2 × 1.2 = 1.44

Addition And Subtraction Of Decimals
When adding or subtracting whole numbers, you just line them up on the right and add (or

subtract).

For example:

25 + 13 = 38

or

59 – 22 = 37

Numbers that include decimals are different. You can’t just line them up and add. If you do that, you end up with the following:

41.78 + 13.2 is equal to 43

It’s easy to see how this is not right. When adding or subtracting with decimals, the numbers need to line up along the decimals. It doesn’t matter how many numbers are on either decimal side. That is where they need to line up to get the correct answer. So let’s do the problem from above correctly. If you need to, you can add zeros at the end of a number to ensure there are two numbers in each column.

41.78 + 13.20 is equal to 54.98.

As long as each of the numbers you are adding or subtracting has the same number of decimal places, the addition or subtraction is pretty straightforward.

In-fact, adding (subtracting) numbers having the same denominator is fairly straightforward. We just need to add or subtract the numerators. After that, divide it by the denominator.

Finding a common denominator can be tricky when dealing with fractional addition and subtraction. In order to identify a common denominator, multiply the two denominators and then transform the numerators to generate comparable fractions. This strategy, on the other hand, is easy to grasp theoretically. Take the above mentioned addition, for instance.

Key tips for Data Sufficiency Questions:

Make a mental note of the Answer Statements.
Each question in a Data Sufficiency question has the same answer statement:

(A) Statement 1 is sufficient on its own, but statement 2 is insufficient on its own.

(B) Statement 2 is sufficient on its own, but statement 1 is insufficient on its own.

(C) Both statements are sufficient when taken together, but neither statement is sufficient on its own.

(D) Each statement is sufficient on its own.

(E) The combined statements 1 and 2 are insufficient.

You should allot approximately two minutes to each Data Sufficiency question; therefore, you will not want to waste time during the test worrying about the answer options. Before you take the test, ensure that you know these by heart and understand what they mean. By memorising these phrases, you improve your chances of quickly analysing the provided facts and selecting the appropriate response option.

Employ an Elimination Process –
Examine Each Statement Separately. The most accurate method of obtaining the correct answer is to examine each statement independently. It is normally ideal to begin with the assertion that appears to be the simplest to comprehend; you are not need to approach them in order.

If assertion 1 is insufficient, response possibilities A and D can be swiftly eliminated.

If statement 2 is insufficient, response possibilities B and D can be swiftly eliminated.

If the first assertion is adequate, you can quickly determine if the second is as well (answer option D)

After that, all that remains is to determine whether the assertions become adequate when combined (response option C) or remain insufficient (answer option E).

You Are Not Required to Know the Correct Answer

It's easy to become so absorbed in the problem that you find yourself attempting to solve it. At all times, keep in mind that you should be working your way through the assertions, removing those that do not apply, identifying the one that does, and moving on to the next. Frequently, applicants become stuck attempting to deduce what 'x' is when, in many circumstances, they do not need to.

Bear in mind that the answer may not be a whole number.

It's frequently beneficial to substitute a real number for the variables in the equations to help make sense of the statements as you move through them. It's important to realise, though, that those variables might be anything – a positive or negative decimal, a negative integer, a positive or negative fraction, and so on.

If a statement states that $x > 8$, you may assume that x must be 9 or more, while in fact it might be any decimal between two whole integers. Bear in mind that the mystery number might be anything, not simply a straightforward, orderly sequence of digits.

Review the Fundamentals

The Data Sufficiency questions are based on fundamental mathematics ideas that you should have learned in school. Refresh your multiplication and division skills, particularly with fractions and decimals, and ensure that you grasp the fundamentals of working with equations. Bear in mind, however, that they are not math examinations. You will perform well on Data Sufficiency problems if you apply estimate, problem-solving, and reasoning abilities

What Are Combinations?

A combination is a way of selecting items from a set, where the order of the items does not matter. For example, if you have a set of three items (A, B, and C), there are three possible combinations that you could create:

(A, B, C)

(A, C, B)

(B, A, C)

However, if the order of the items does matter, then it is no longer a combination. For example, if you have a set of three items (A, B, and C), there are six possible permutations that you could create:

(A, B, C)

(A, C, B)

(B, A, C)

(B, C, A)

(C, A, B)

(C, B, A)

Now that we've reviewed what combinations are, let's move on to the properties.

Properties Of Combinations

The Identity Property of Combination

The identity property of combination states that the combination of any set with the empty set results in the original set. In other words, if you have a set A and you add to it the empty set, then

the resulting set is still A.

The Commutative Property of Combination

The commutative property of combination states that the order in which you combine two sets does not matter. So, if you have two sets A and B, then the combination A + B is the same as B + A.

The Associative Property of Combination

The associative property of combination states that when you have three sets, you can combine them in any order and get the same result. So, if you have sets A, B, and C, then the combination (A + B) + C is the same as A + (B + C).

The Distributive Property of Combination

The distributive property of combination states that when you have two sets and a third set that is a combination of those two sets, you can combine the first set with each element of the third set and get the same result as combining the first set with the third set. So, if you have sets A and B, and C is the combination of A and B, then the combination A + (B + C) is the same as (A + B) + C.

The Empty Set Property of Combination

The empty set property of combination states that the combination of any set with the empty set is the empty set. So, if you have a set A and you add to it the empty set, then the resulting set is the empty set.

The Subset Property of Combination

The subset property of combination states that if you have two sets A and B, and A is a subset of B, then the combination A + B is also a subset of B. So, if you have sets A and B, and A is a subset of B, then the combination A + B is also a subset of B.

The Superset Property of Combination

The superset property of combination states that if you have two sets A and B, and A is a superset of B, then the combination A + B is also a superset of B. So, if you have sets A and B, and A is a superset of B, then the combination A + B is also a superset of B.

What is divisibility by 25?

Divisibility by 25 means that a number is divisible by 25. A number is divisible by 25 if the last or the final two digits of the number are divisible by 25. For example, 125 is divisible by 25 because the last two digits, 25, are divisible by 25.

When a number is divisible by 25, it means that the number can be divided evenly by 25. The number 50 is divisible by 25 because it can be evenly divided into two groups of 25. 100 is divisible by 25 because it can be evenly divided into four groups of 25.

The divisibility rule for 25:
The divisibility rule for 25 is helpful to know when you're trying to figure out whether a number is divisible by 25. Here are the rules for divisibility of 25:

If the last or the final two digits of a number are divisible by 25 then the whole number is divisible by 25. This rule can be used to check if a number is divisible by 25 without doing any division.

For example: Is 600 divisible by 25? Yes, because the last two digits, 00 are divisible by 25.

You can also use this divisibility rule when the number you're trying to divide isn't a multiple of 25.

For example: What is the smallest number divisible by 25? The answer is 100 because it is the smallest number whose last two digits are divisible by 25.

This divisibility rule can also be applied to other numbers that end with 00 such as 50, 100, and 200.

The divisibility rule for 25 can be a helpful tool when you're trying to figure out whether a number is divisible by 25. Be sure to keep this rule in mind the next time you need to do some

division!

By following these simple rules, you can quickly and easily determine if a number is divisible by 25 without having to do any extra work. So next time you're stuck on a division problem, be sure to check and see if the divisibility rule for 25 can help you out!

As you can see, the divisibility rule for 25 is a simple and easy way to determine if a number is divisible by 25. Be sure to keep this rule in mind the next time you need to do some division!

Divisibility by 25 questions:
Here are some divisibility by 25 questions:

Question 1: What is the least number divisible by both 24 and 25?

Solution: The least number divisible by both 24 and 25 is 1200.

To find the least number divisible by two numbers, we need to find their LCM (lowest common multiple).

The LCM of 24 and 25 is 1200.

Question: Is 27 divisible by 25?

Solution: No, 27 is not divisible by 25.

To check if a number is divisible by another number, we need to see if there is a remainder when we divide them. So, When 27 is divided25, the remainder is not 0. Therefore, we can say that 27 is not divisible by 25.

Question: Is 40000 divisible by 25?

Solution: Yes, 4000 is divisible by 25.

When we divide 4000 by 25, the remainder is 0. Therefore, 4000 is divisible by 25.

Now that we know how divisibility by 25 works, let’s try some divisibility by 25 questions!

Divisible by 25 Questions
What is the smallest number divisible by 25 from 26 to 100?

What is the smallest number divisible by 25 from 101 to 200?

What is a Bar Chart?

A Bar Chart is a chart that uses horizontal or vertical bars to show us a comparative study about the various categories of the given data or information.

In other words, a Bar Chart shows/ displays and compares a discrete category of information provided. The height of each bar defines a specific numeric value.

Types of Bar Charts-
Single or vertical Bar Chart- A Single or Vertical Bar Chart is a graph that is used to convey the discrete value of the items for each category on either side of the axes on the graph.
Horizontal Bar Charts- A Horizontal Bar Chart is similar to a Vertical Bar Chart but its position is horizontal. The longer the horizontal bar the more the category or value of the respective unit.
Grouped Bar Chart- A Grouped Bar Chart is a Cluster Bar Chart to depict discrete values for multiple items that lie under the same category. They also help us to show the values of sub-groups of similar categories.
Stacked Bar Chart- Some Bar Charts have the bars of the graph divided into subparts that represent the discrete values for items that represent a portion of an entire group is called a Stacked Bar Chart.
These Charts are similar to Grouped Bar Charts only the Bar is divided into multiple sub-groups.

Stacked Bar Charts are also used to represent the percentage contribution that the different sub-

groups contribute to each class.

The different parts of a Bar Chart are-
Measurements
Title
Axis label
Category name
Key
How To Read Or Describe A Bar Chart?
First- The trend of the graph must be mentioned at first. That is the main concept and idea of the chart that must be stated.

Second- The Bar Charts must be supported with the help of examples. Specific data that supports the main idea of the charts.

Third- The main idea of the Bar Chart must be repeated, the audience must be reminded once again what this Bar Chart is all about.

Uses of a Bar Chart-
A bar chart is used to:

Compare data for different classes of groups
Show the relation between the various classes and groups by using the axes of the graph
Make the study of different aspects easy with comparison
Create presentations
Represent the given information
Study patterns of various groups over a large period
Inform employees about the increase and decrease in their sales over time
Important Things To Remember While Working With Bar Charts-

Do not describe the types of bars.
Do not use shorthand.
Never start any sentences with numbers.

Do not mention every detail, the pictorial presentation must be enough to understand.

Role of Bar Charts in the Stock Market

A Bar Chart in the Stock Market depicts the price bars of each stock or categories of stocks that show the movement of the prices of each stock over a brief period. Each bar has a straight (vertical) line that shows the highest price and lowest price reached by the stock during the wanted period.

Bar charts help the traders in the stock market to scrutinize trends, identify trends, and monitor the price movements.

If the upper and lower extremities of a Bar Chart in the field of the Stock Market are near to each other then the collateral will be considered immutable. If the price difference is large between upper extremities and lower extremities then collateral will be considered flexible.

If the opening price of the market is less than the current closing price then the bar chart will indicate as black or green. It will thus, represent a security benefit. However, the bar chart will display the loss of securities if the opening price of the market is near to the current market price. It will be displayed as red.

Analysts post comparing several chart bars have found out that colour code indeed helps in understanding the graph quickly and easily.

Bar Charts in Excel

To insert a bar chart in Microsoft Excel, first, you must open your Excel spreadsheet and select your data. This can be done manually by using your mouse cursor, or you can select a required cell in your required range and press ‘Ctrl+A’ to select the data automatically (Select All).

Once the desired data is selected, then click on Insert then choose Insert Column or Bar Chart. You will see various kinds of Bar Charts.

Microsoft Excel will then automatically extract data from your data and then it will create a chart on the same spreadsheet, using your column and row labels to headings of the axis and chart. You can enlarge or reduce the size of the chart as per the requirements.

Understanding the concepts based on boats and rivers

Delving into the study, it is well acknowledged that the notions that are associated with the boats and streams are frequently asked in several competitive examinations. However, it is noticed that the basic concepts that underlie the concepts associated with boats and streams are majorly relation that is evidenced by the aspects of time taken, speed acknowledged and as well as distance travelled. It also needs it noted that before entering into the chapter one needs to know the meaning of the terminologies that are associated with boats and streams. The term “upstream” refers to the motion of a swimmer in just the opposite direction of the stream. This is contradictory to the term ”downstream” as it implies the movement of boats along with the flow of the river. Moreover, stream refers to the water that has currently associated with it.

Formulas associated with boats and rivers

Several formulas are there that effectively help in solving the problem associated with the situation that is based on the specific conditions. “u” refers to the speed of the boat and “v” determines the speed of the stream, to that the formulas are as follows.

“Upstream” equals (u-v) kilometres per hour

“Downstream” equals (u+v) kilometres per hour

Speed of stream equals half multiplied by the difference of speed of downstream and upstream

In still water, the speed of the boat equals half multiplied by the sum of downstream and upstream

Calculating the speed of the river and the boat

Calculating the speed of the boat as well as the stream is quite easy if one properly understands the concepts associated with it. For example, a boat is moving down in the river with a speed of 28 km in 4 hours time and going up the river, takes 6 hours for 12 km. Determine the speed of the boat and the river. In answering the question, the speed of the boats in stagnant water will be half multiplied by the summation of “upstream and downstream”, which means, [½ (7+2)]= 4.5 km per hour. On the other hand, the speed of the stream is denoted by half multiplied by differences between upstream and downstream, i.e., [½ (7-2)]= 2.5 km per hour.

Riverboat problems and solutions

In order to resolve the problem associated with boats and streams, directions, and formulas are to be considered. Moreover, the direction of flow of current also needs to be taken care of.

Tips that will support in solving the problems of rivers and boats

In order to easily and correctly solve the problem associated with the chapters of stream and boats one needs to follow a few significant tips. The first and foremost notion is to effectively memorize the formulas associated with boats and streams. This is followed by determining the direction of flow and as well focusing on the concepts.

River and boat problems

Several problems are noticed, one such is, an individual row 18 km in a downward motion in 4 hours and returns in 12 hours then the speed of the person with that of the stream is, [½ (4.5-1.5)]= 1.5 km per hour is the speed of stream and 3km per hour as the speed of the man.