

Maths

Chapter – I Fractions

1. Fraction is a part of a whole. The whole may be a single object or a group of objects.

2. Equivalent fractions are got by multiplying the numerator and denominator of a given fraction by the same number.

Example: $\frac{1}{2} = \frac{2}{4} = \frac{3}{6}$

3. Unlike fractions can be added or subtracted by converting them into “like fractions”.

4. $\frac{2}{6} + \frac{3}{6} = \frac{5}{6}$

5. Reciprocal of $\frac{7}{5}$ is $\frac{5}{7}$

6. $4 \div \frac{1}{7} = 4 \times \frac{7}{1} = 28$

7. $\frac{1}{3}$ of 60 = $\frac{1}{3} \times \frac{60}{1} = \frac{20}{1} = 20$

8. Improper fraction =

$$\frac{(\text{Whole number} \times \text{Denominator}) + \text{Numerator}}{\text{Denominator}}$$

9. Mixed fraction is the sum of a whole number and a proper

fraction. Examples: $4\frac{1}{2}$, $11\frac{7}{3}$

10. Product of two fractions = $\frac{\text{Product of their numerators}}{\text{Product of their denominators}}$

11. The numerator and denominator of a fraction are interchanged to get its reciprocal.

12. Dividing a number by a fraction is the same as multiplying that number by the reciprocal of the fraction.

13. Unit fractions are fractions having 1 as its numerator.

Example: $\frac{1}{7}, \frac{1}{5}, \frac{1}{9}$

14. $\frac{1}{14} < \frac{1}{17}$

15. Mixed fraction = Quotient $\frac{\text{Remainder}}{\text{Divisor}} = Q \frac{R}{D}$

16. The product of a fraction and its reciprocal is always 1.

Chapter – 2 Integers

1. Natural numbers are also called as positive integers.

2. 0 is neither positive nor negative number.

3. Integers are denoted by the alphabet ‘Z’

4. The opposite of – 25 is +25

5. 20°C below 0°C is represented as - 20°C

6. A jet plane at a height of 2500m can be written as + 2500m

7. The greatest negative integer is -1

8. The smallest positive integer is + 1

9. Whole numbers are called as non-negative integers.

10. Positive and negative numbers together are called as signed numbers.

11. Every positive integer is greater than each negative integers.

12. $-4 < + 2$

13. The signed numbers are also called as Directed numbers.

14. The successor of -8 is -7

15. The predecessor of -20 is -21

16. The set of numbers -3, -2, -1, 0, 1, 2, 3 ...

17. 5 units to the left of -2 is -7

18. -13 is to the left of -7 on the number line

19. 15kg below normal weight is -15kg

20. $5 + (-6) = -1$

21. The opposite of the opposite of a number is the number itself.

Eg. $-(-5) = +5$

22. The collection of zero, positive and negative numbers forms integers.

Chapter – 3 Perimeter And Area

1. In a square all sides are equal in length.

2. In a rectangle the opposite sides are equal in length.

3. Total length of the boundary of any closed figure is called perimeter.

4. The surface occupied by a closed figure is called area.
5. Perimeter of the square = $4 \times S$ units
6. Perimeter of the rectangle = $2(l + b)$ units.
7. Perimeter of the triangle = $(a + b + c)$ units
8. Area of a square = side \times side sq. units
9. Area of a rectangle = length \times breadth sq. units
10. Area of right angled triangle = $\frac{1}{2} \times (b \times h)$ sq. units
11. $1 \text{ cm}^2 = 100\text{mm}^2$
12. $1\text{m}^2 = 10000\text{cm}^2$
13. $1\text{km}^2 = 1000000\text{m}^2$
14. 1 acre = 4046.86m^2
15. 1 hectare = 10000m^2
16. Perimeter of the shape with equal sides = No. of sides \times length of a side.
17. The perimeter of a combined shape is the sum of the length of the shapes.
18. Shapes with the same perimeter may have different areas.
19. Shapes with the same area may have different perimeters.
20. The word perimeter is derived from the Greek words 'peri' and 'metron'

Chapter – 4 – Symmetry

1. The word “symmetry” comes from the Greek word “symmetros”
2. A shape has reflection symmetry if it has a line of symmetry.
3. A rhombus has 2 lines of symmetry.
4. A figure is said to have rotational symmetry, if the order of rotation is atleast 2
5. Translation symmetry occurs when an object slides to new position.
6. The total number of times a figure coincides with itself in one complete rotation is called the order of rotational symmetry.
7. An object is said to have a rotational symmetry if it looks the same after being rotated about its centre through an angle less than 360°

Chapter – 5 Information Processing

1. An Iterative process is a procedure that is repeated many times to give new results
2. The Fibonacci sequence is 1,2,3,5,8,13,21,34, Each term in the Fibonacci sequence is called a Fibonacci number.
3. Dividend = (Divisor \times Quotient) + Remainder is called the Euclidean algorithm.
4. The Lucas sequence is 1,3,4,7,11,18,29,47,76,123
5. Mathematical patterns are found in the distinct marking on animals and the structure of seashells also.