

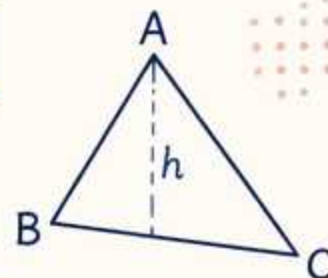
$$2 \times 3 = 6$$



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CLASS 6

IMPORTANT MATHEMATICS FORMULAS



$$a^2 + b^2 = c^2$$

1 NATURAL NUMBERS

a) Addition

$$a + b = b + a \quad (\text{Commutative Law})$$

b) Multiplication

$$a \times b = b \times a \quad (\text{Commutative Law})$$

c) Distributive Law

$$a \times (b + c) = a \times b + a \times c$$

where a, b, c are natural numbers.

1 2 3
4 5 6
7 8 9
0

2 WHOLE NUMBERS

a) Addition

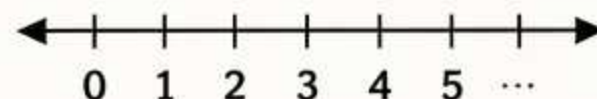
$$a + 0 = a$$

b) Subtraction

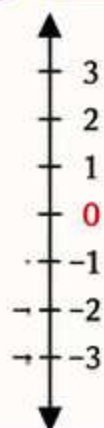
$$a - 0 = a$$

Whole numbers:

0, 1, 2, 3, 4, 5, ...



3 INTEGERS



a) Addition

$$a + (-b) = a - b$$

b) Subtraction

$$a - (-b) = a + b$$

c) Additive Inverse

$$a + (-a) = 0$$

Integers are:

..., -3, -2, -1,
0, 1, 2, 3, ...

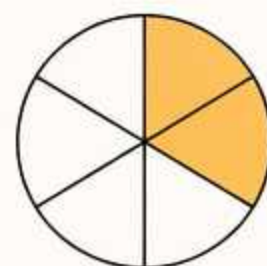
4 FRACTIONS

a) Addition

$$\frac{a}{b} + \frac{c}{d} = \frac{ad + bc}{bd}$$

b) Subtraction

$$\frac{a}{b} - \frac{c}{d} = \frac{ad - bc}{bd}$$



$$\frac{2}{6} = \frac{1}{3}$$

($b \neq 0, d \neq 0$)

5 DECIMALS

a) Decimal to Fraction

$$0.abc = \frac{abc}{1000}$$

b) Fraction to Decimal

$\frac{p}{10, 100, 1000, \dots}$
(place decimal point according to denominator)

H	T	O	.	t	h
4	3	2	1	1	5

Whole Part

Decimal Part

Example: 432.15

6 BASIC GEOMETRICAL FORMULAS

a) Perimeter of Square

$$P = 4a$$

b) Area of Square

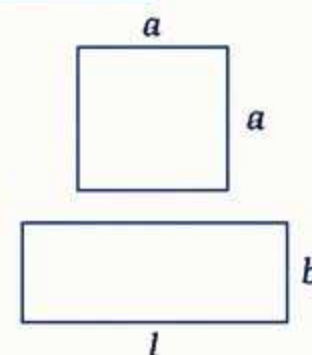
$$A = a^2$$

c) Perimeter of Rectangle

$$P = 2(l + b)$$

d) Area of Rectangle

$$A = l \times b$$



where a = side, l = length, b = breadth

7 FACTORS AND MULTIPLES

- If a is a factor of b , then $b = a \times k$, where k is a natural number.
- If a number is divisible by two numbers a and b , then it is divisible by their HCF.
- If a number is a multiple of two numbers a and b , then it is also a multiple of their LCM.

$$\text{HCF} \times \text{LCM} = \text{First Number} \times \text{Second Number}$$

8 RATIO AND PROPORTION

a) Ratio

If a and b are two numbers ($b \neq 0$), then $a : b = \frac{a}{b}$

b) Proportion

If $\frac{a}{b} = \frac{c}{d}$, then $a \times d = b \times c$ ($b \neq 0, d \neq 0$)



9 SYMMETRY



A figure is said to be symmetric if it can be divided into two identical parts by a line. The line is called the line of symmetry.

10 DATA HANDLING

a) Mean

$$\text{Mean} = \frac{\text{Sum of all observations}}{\text{Number of observations}}$$

b) Range

$$\text{Range} = \text{Highest value} - \text{Lowest value}$$

