Aakash

Medical | IIT-JEE | Foundations

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PREFACE

What is Knowledge Bytes ?

Knowledge Bytes is a collection of riddles, interesting facts, mnemonics, and puzzles that will make your learning fun and engaging.

We want you to be delighted about studying. Knowledge Bytes helps you to know more about the subject in a fun, motivating and educational way and helps to implement what you learn in a creative way.

Benefits

- Saves Time

- Develops Learning Skills

- Stimulates Interest

- Leads to Increased Comprehension

Absolute Value or Modulus

The absolute value or modulus of a real number x is denoted by |x| and it is non-negative for any value of x.

$$|x| = \begin{cases} x & \text{if } x \geq 0 \\ -x & \text{if } x < 0 \end{cases}$$

I am always positive

|x|

A vertical bar on each side of the quantity
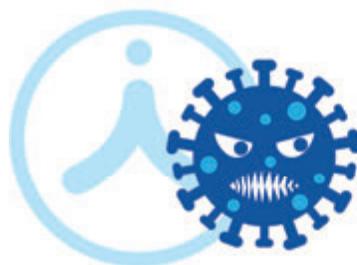
Just like that

$|6 \times (-2)| = |-12| = 12$

$-|3 - 8| = -|-5| = -5$

$-|7 - 2| = -|5| = -5$ etc.

The absolute value of a number can be considered as its distance from zero.

'4' is 4 units away from zero and '−4' is also 4 units away from zero.

$|4| = 4$ and $|-4| = 4$

Formulas Involving Surface Areas and Volumes

Cuboid

$$\frac{LSA}{2(l+b)h}$$

$$\frac{\text{other related formula}}{\sqrt{l^2+b^2+h^2}=\text{diagonal}}$$

1

$$\frac{Volume}{lbh}$$

$$\frac{TSA}{2(lb+bh+hl)}$$

2

Cube

Right circular cone

$$\frac{TSA}{6\times(s)^2}$$

$$\frac{LSA}{4\times(s)^2}$$

3

$$\frac{\text{other related formula}}{\sqrt{3}\,s=\text{diagonal}}$$
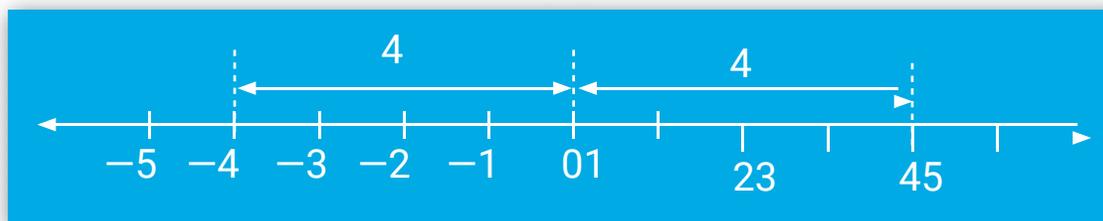
$$\frac{Volume}{s^3}$$

$$\frac{TSA}{\pi r(r+l)}$$

$$\frac{CSA}{\pi rl}$$

$$\frac{Volume}{\frac{1}{3}\pi r^2 h}$$

$$\frac{\text{other related formula}}{l^2=h^2+r^2}$$

4

Sphere

Hemisphere

$$\frac{CSA}{4\pi r^2}$$

$$\frac{Volume}{\frac{4}{3}\pi r^3}$$

$$\frac{Volume}{\frac{2}{3}\pi r^3}$$

$$\frac{CSA}{2\pi r^2}$$

5

Right circular cylinder

Frustum

$$\frac{CSA}{\pi(r_1+r_2)l}$$

$$\frac{TSA}{\pi(r_1+r_2)l+\pi r_1^{\,2}+\pi r_2^{\,2}}$$

6

7

$$\frac{Volume}{\frac{1}{3}\pi h(r_1^{\,2}+r_2^{\,2}+r_1 r_2)}$$

$$\frac{\text{other related formula}}{l=\sqrt{[(r_1-r_2)^2+h^2]}}$$

$$\frac{Volume}{\pi r^2 h}$$

$$\frac{CSA}{2\pi rh}$$

$$\frac{TSA}{2\pi r(r+h)}$$

Hollow cylinder

8

$$\frac{TSA}{2\pi h(r+R)+2\pi(R^2-r^2)}$$

$$\frac{Volume}{\pi(R^2-r^2)h}$$

Factorization

The flowchart below illustrates a sequence of steps for factorization of polynomials.

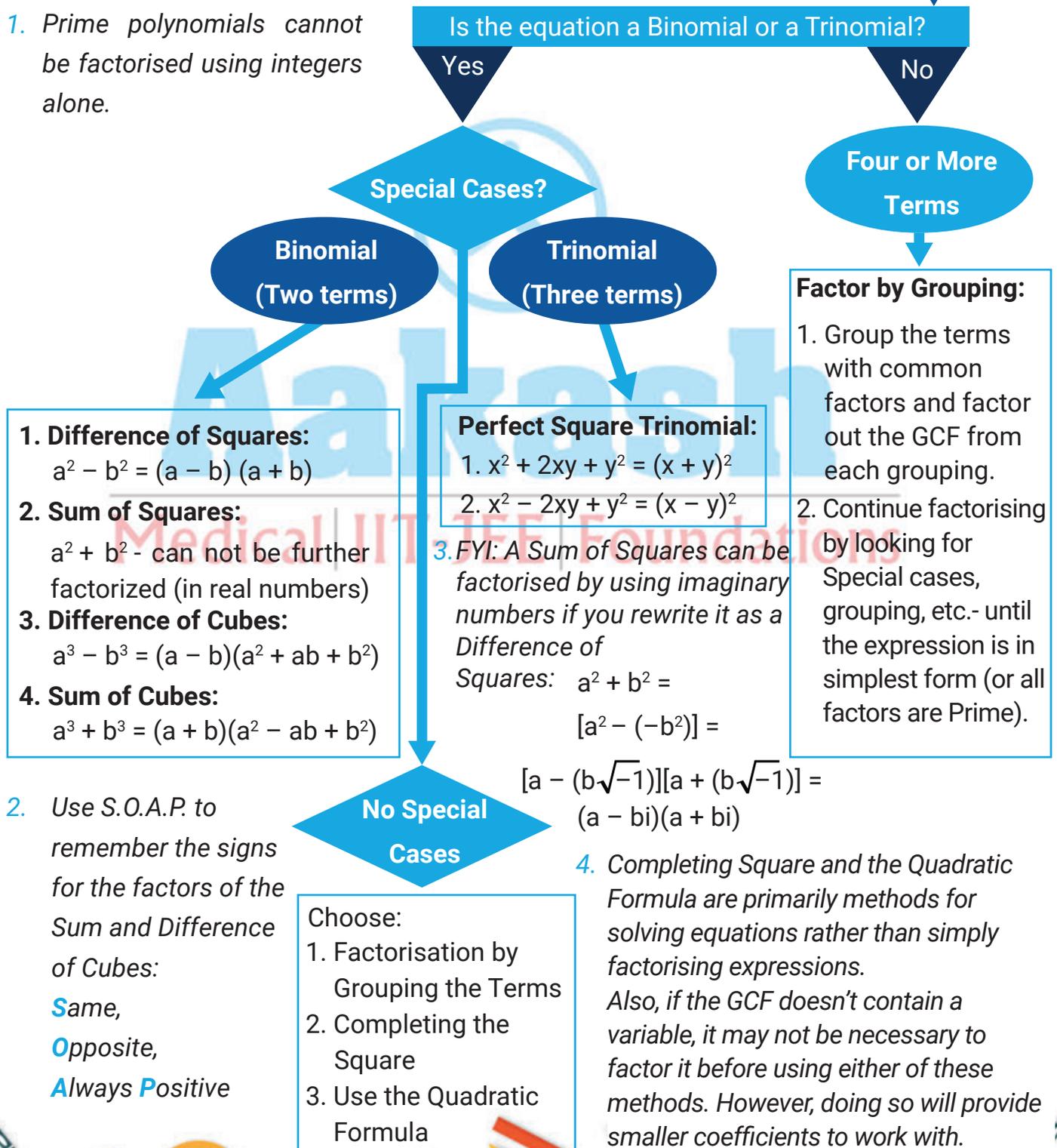First, always factor out the Greatest Common Factor (GCF), if one exists.

1. *Prime polynomials cannot be factorised using integers alone.*

Is the equation a Binomial or a Trinomial?

Yes — **Special Cases?**

No — **Four or More Terms**

Binomial (Two terms)

Trinomial (Three terms)

Factor by Grouping:

1. Group the terms with common factors and factor out the GCF from each grouping.
2. Continue factorising by looking for Special cases, grouping, etc.- until the expression is in simplest form (or all factors are Prime).

1. Difference of Squares:
$a^2 - b^2 = (a - b)(a + b)$

2. Sum of Squares:
$a^2 + b^2$ - can not be further factorized (in real numbers)

3. Difference of Cubes:
$a^3 - b^3 = (a - b)(a^2 + ab + b^2)$

4. Sum of Cubes:
$a^3 + b^3 = (a + b)(a^2 - ab + b^2)$

Perfect Square Trinomial:
1. $x^2 + 2xy + y^2 = (x + y)^2$
2. $x^2 - 2xy + y^2 = (x - y)^2$

3. *FYI: A Sum of Squares can be factorised by using imaginary numbers if you rewrite it as a Difference of Squares:* $a^2 + b^2 =$

$[a^2 - (-b^2)] =$

$[a - (b\sqrt{-1})][a + (b\sqrt{-1})] =$
$(a - bi)(a + bi)$

No Special Cases

Choose:
1. Factorisation by Grouping the Terms
2. Completing the Square
3. Use the Quadratic Formula

2. *Use S.O.A.P. to remember the signs for the factors of the Sum and Difference of Cubes:*
Same,
Opposite,
Always **P**ositive

4. *Completing Square and the Quadratic Formula are primarily methods for solving equations rather than simply factorising expressions.*
Also, if the GCF doesn't contain a variable, it may not be necessary to factor it before using either of these methods. However, doing so will provide smaller coefficients to work with.

Gravitation Facts

1. Newton was not hit by apple - he simply observed an apple falling from a tree.

2. Gravity word originated from the Latin word gravis (heavy).

3. Fishes have calcium deposits or stones in their heads that tells them which way is up through feeling gravitational pull.

4. Gravitational force makes ocean bulge.

5. The higher something is, the greater its gravitational potential energy.

6. Archimedes first discovered centre of gravity of a triangle.

7. Larger masses are subjected to greater gravity.

8. Our weight at poles will be more than that of equator.

9. We feel weightlessness at the centre of earth.

10. If we throw something with speed more than 11.2 km/s, then it will never come back.

Newton's Gravity Law

$$F_1 = F_2 = \frac{G m_1 m_2}{r^2}$$
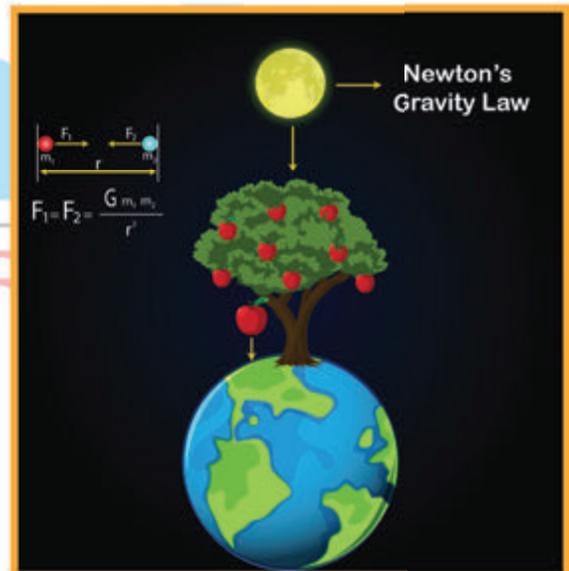
1 When a body falls freely under gravity then the work done by the gravity is

(a) Positive

(b) Negative

(c) Zero

(d) Infinity

2 When a gas filled in a cylinder fitted with a movable piston is allowed to expand the work done by the gas is positive

(a) True

(b) False

3 When a body slides against a rough horizontal surface, the work done by friction is ____

(a) Positive

(b) Zero

(c) Negative

(d) Constant

4 When a body is lifted the work done by the gravitational force is positive

(a) True

(b) False

5 For a body moving in a circular path, the work done by the centripetal force is ___

(a) Negative

(b) Positive

(c) Constant

(d) Zero

6 When a coolie walks on a horizontal platform with a load on his head, the work done by the coolie on the load is zero

(a) True

(b) False

7 A gardener pushes a lawn roller, through a distance of 20 m. If he applies a force of 20 kg wt in a direction inclined at 60° to the ground. Find the work done by him. ($g = 9.8$ m/s^2)

(a) 400 J

(b) 1960 J

(c) 250 J

(d) 2514 J
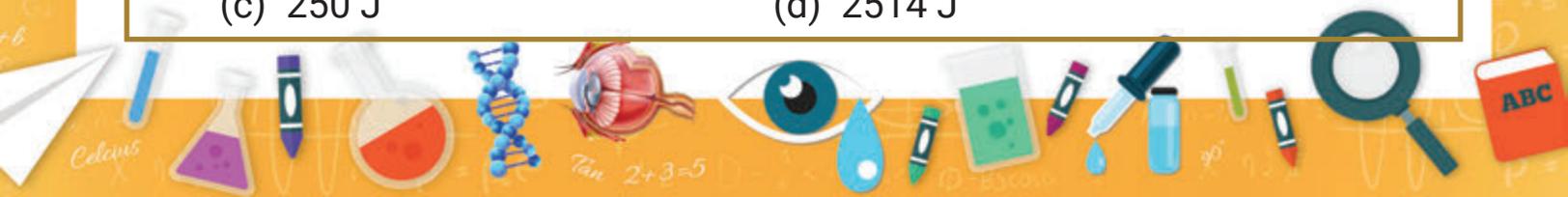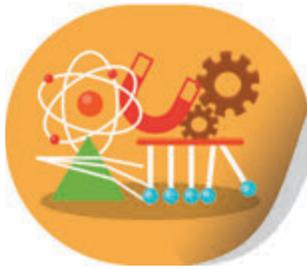
Motion

Crossword
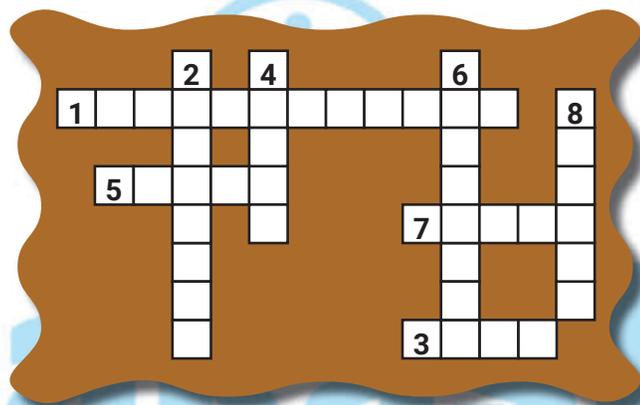
ACROSS

1. Rate of change of velocity. [12]

3. A body is said to be at _____ if it does not change its position w.r.t its surroundings with the passage of time. [4]

5. _____ of the velocity-time graph gives acceleration of an object. [5]

7. For your total displacement to be zero you must end up back from where you _____. [5]

DOWN

2. Speed in particular direction. [8]

4. SI unit of displacement. [5]

6. Speed is always _____. [8]

8. The physical quantity which has both magnitude as well as direction. [6]

(?) Answer (Quiz)

1 (a) Positive   **2** (a) True

3 (c) Negative   **4** (b) False

5 (d) Zero   **6** (a) True

7 (b) 1960 J

Answer (Crossword)

```
            2      4                 6
            V      M                 P              8
     1 A C C E L E R A T I O N       O              V
            L      T                 S              E
        5 S L O P E                  I              C
            O      R              7 S T A R T       T
            C                        I              O
            I                        V              R
            T                     3 R E S T
            Y
```

St. Elmo's Fire

St. Elmo's fire is a persistent blue glow that occasionally appears near pointy objects during storms. It is a luminous plasma discharge from a pointed object. That is why it usually emanates from the nose of a plane or the mast of a ship.

St. Elmo's Fire was named by sailors of old time. They couldn't understand what caused the glow around their ship that looked like a sort of divine fire and named it after St. Erasmus, also known as St. Elmo. He is the patron saint of sailors. The appearance of the mysterious glow was said to be a good omen of the saint watching over the crew, though it may be scary.

The glow and subsequent discharge typically occur when a plane or ship comes near a thunderstorm or volcanic activity. It can also occur on the tops of buildings and electrical towers.

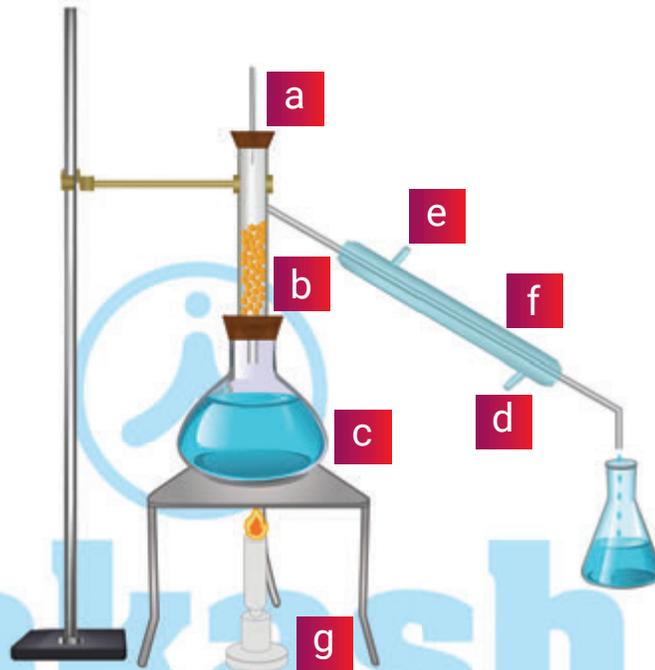# Scientific Explanation Behind the St. Elmo's Fire

When the electrical field around a pointed object builds a sufficient charge, it ionizes the air around it and turns it into plasma. The blue/violet colour is the result of nitrogen and oxygen, which make up the majority of the atmosphere. Although the glow and discharge bursts can sometimes make a hiss or buzz, St. Elmo's Fire itself is completely harmless.

Quiz Time?

1. If one mole of oxygen gas has x atoms then number of atoms in one mole of ozone will be

A	x	B	2x/3
C	3x/2	D	2x

2. Mass of half mole of hydrogen atom is

A	2 gram	B	1 gram
C	0.5 gram	D	0.25 gram

3. Which of the following states of matter has minimum kinetic energy?

A	Solid	B	Liquid
C	Gaseous	D	Plasma

4. Which of the following atoms has the same number of valence electrons as a krypton atom with atomic number 36?

A	Chlorine	B	Sodium
C	Rubidium	D	Xenon

5. Which of the following electronic configurations is incorrect?

A	Be - 2, 2	B	O - 2, 6
C	S - 2, 6, 8	D	P - 2, 8, 5

What's My Name? My Name is_____ .

a
e
b
f
c
d
g

Answers (Quiz Time)

1. C   **2.** C   **3.** A   **4.** C   **5.** C

Answers (What's My Name? My Name is_____)

a. Thermometer   b. Fractionating column   c. Round bottom flask

d. Water inlet   e. Water outlet   f. Water condenser

g. Burner

ANIMAL CELL
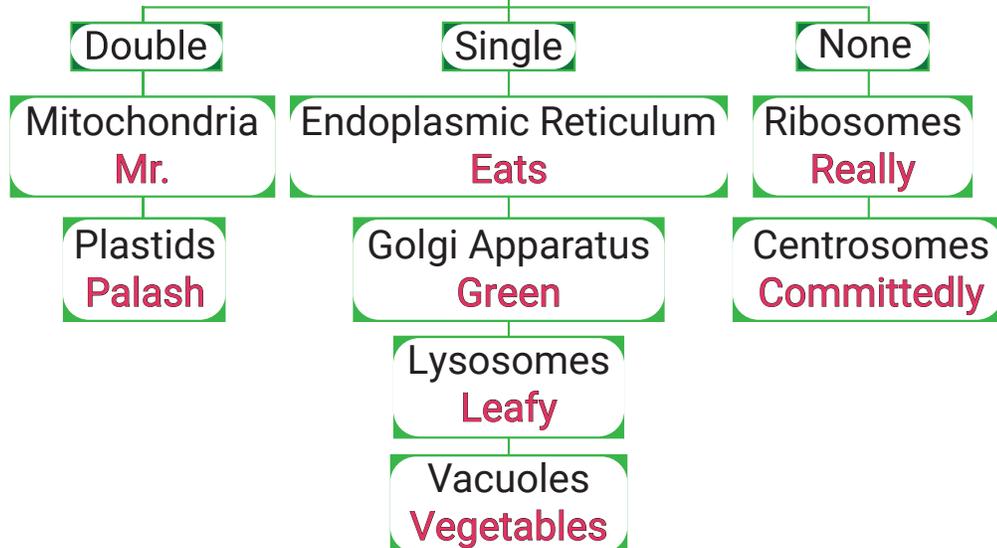
Cytoplasm
Cell membrane
Centriole
Nucleus
Ribosome
Endoplasmic Reticulum
Lysosome
Mitochondrion
Golgi Apparatus
Vacuole
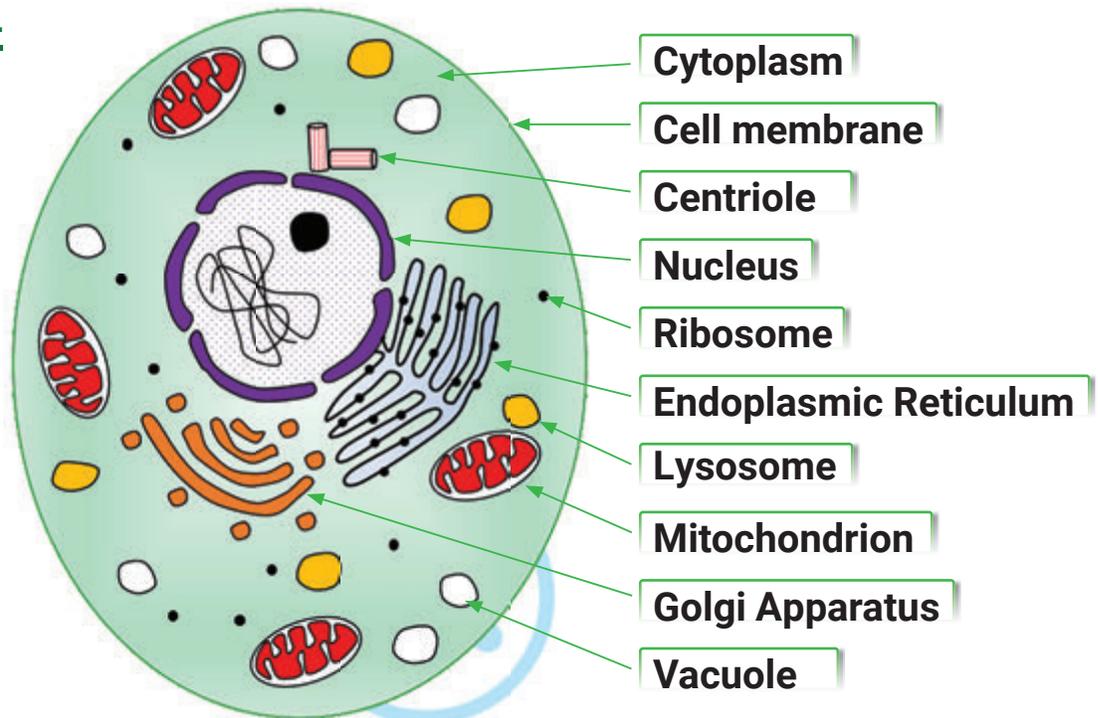
Simple Stratagems

CELL ORGANELLES

On the basis of number of membranes surrounding it

Double	Single	None
Mitochondria **Mr.**	Endoplasmic Reticulum **Eats**	Ribosomes **Really**
Plastids **Palash**	Golgi Apparatus **Green**	Centrosomes **Committedly**
	Lysosomes **Leafy**	
	Vacuoles **Vegetables**	

Mr. Palash Eats Green Leafy Vegetables Really Committedly

11

Classification of Animal Tissues

Epithelial Tissue
(Protective, Secretion Absorption)

Squamous
(Flattened cells)

Columnar
(Tall and Pillar like cells)

Cuboidal
(Cube like cells)

Cillated
(Cube like cells with cilia)

Glandular
(Modified columnar cells with secretory function)

Muscular Tissue
(Movement and Locomotion)

Striated (or) Voluntary muscle

Non-striated (or) Involuntary muscle

Cardiac Muscle

Nervous Tissue
(Control and co-ordination)

Cyton (or) cell body

Axon

Dendron

Connective Tissue
(Support, Binding and Packing)

Connective Tissue Proper

Supportive Connective Tissue

Dense Connective Tissue

Fluid Connective Tissue

Areolar

Cartilage

Tendon

Blood

Lymph

Adipose

Bone

Ligament

Plasma

RBC

WBC

Platelets

Concept Map

TISSUES

- **PLANT TISSUE**
- **ANIMAL TISSUE**

MERISTEMATIC TISSUE

(Dividing)

PERMANENT TISSUE

(Non- dividing)

APICAL   **LATERAL**   **INTERCALARY**

SIMPLE   **COMPLEX**

Shoot
Apical Meristem

Node
Intercalary Meristem

XYLEM   **PHLOEM**

Root
Apical Meristem

**Stem
Lateral Meristem**

XYLEM   **PHLOEM**

Companion
cell

Source
(leaf cell)

Water

Sieve tube elements

PARENCHYMA   **COLLENCHYMA**   **SCLERENCHYMA**

Intercellular space
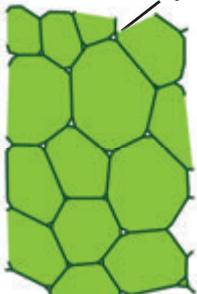
Wall thickenings
Nucleus
Vacuole
Cell wall

Thick lignified
walls

Companion
cell

Sink
(root cell)

Water

Parenchyma   Collenchyma   Sclerenchyma

13
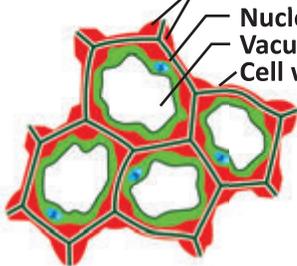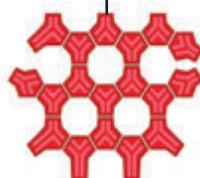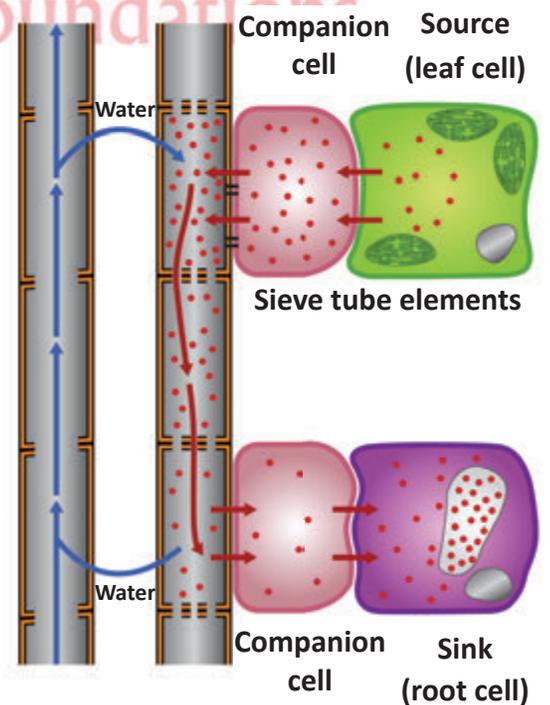
Democratic Rights

Fundamental Rights

Democratic Rights are basic human rights guaranteed by the Constitution

Right to Equality	All are equal before the law.	Equality of opportunity.
	Prohibition of discrimination.	Abolition of untouchability
	Abolition of titles	

Right to Freedom
- Freedom of speech & expression.
- Freedom to form assembly.
- Freedom to move, live, and work anywhere in India.

Right against Exploitation
- Prohibits human trafficking.
- Prohibits forced labor.
- Prohibits employment of children in factories & mines.

Right to Freedom of Religion
- Freedom to practice and propagate any religion
- Freedom to manage religious matters
- Freedom from taxation to the money devoted for religious purposes
- No specific religious education in government aided institutions

Cultural & Educational Rights
- Right of any section of society to conserv its culture and script.
- Minorities have the right to establish & manage educational institutions.
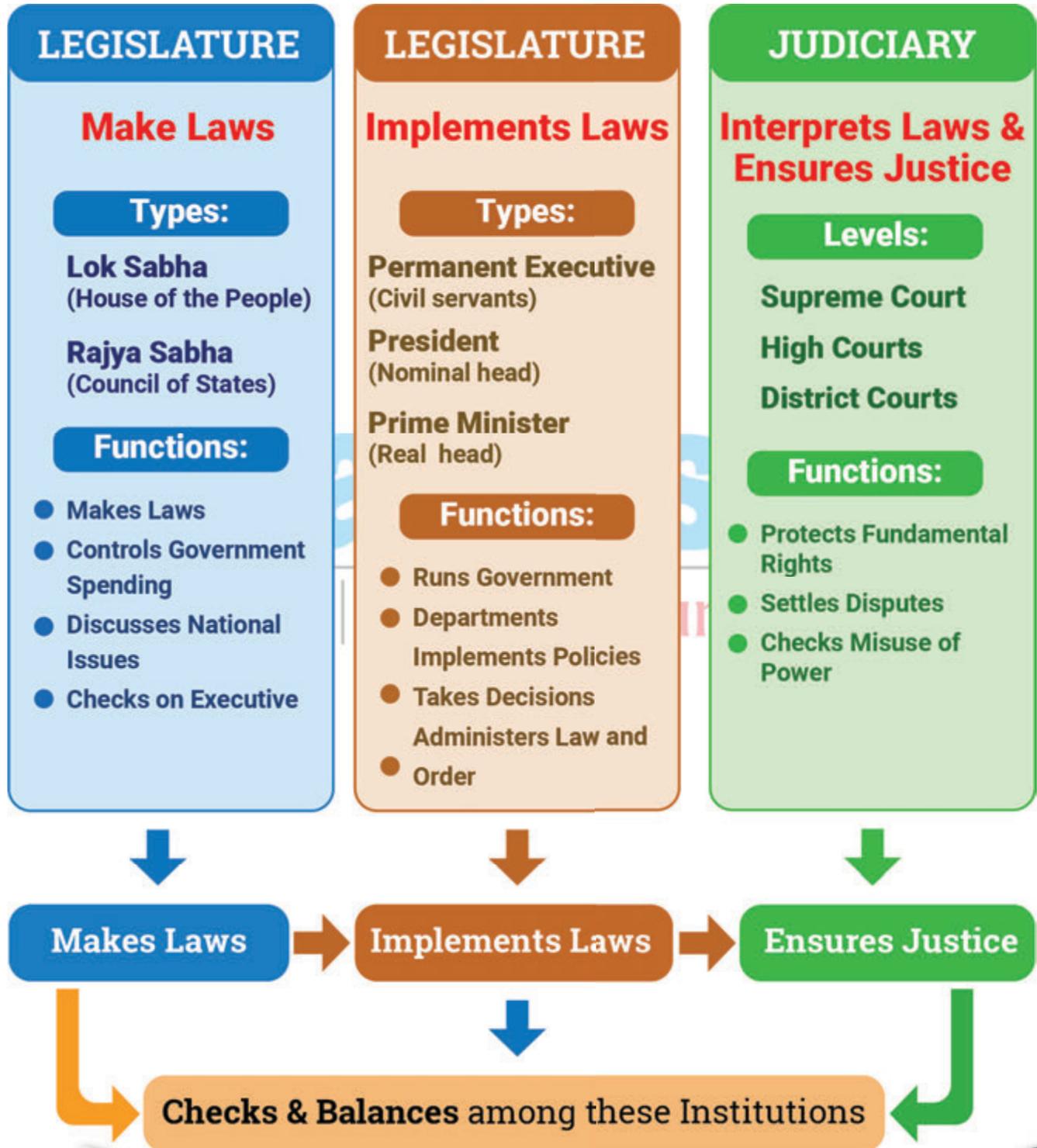
Right to Constitutional Remedies
- Citizens can go to court if any Fundamental Right is violated.
- Court protects citizens' rights.

Protecting democratic rights is essential for maintaining a just and equal society.

Working of Institutions

LEGISLATURE
Make Laws

Types:

Lok Sabha
(House of the People)

Rajya Sabha
(Council of States)

Functions:

- Makes Laws
- Controls Government Spending
- Discusses National Issues
- Checks on Executive

LEGISLATURE
Implements Laws

Types:

Permanent Executive
(Civil servants)

President
(Nominal head)

Prime Minister
(Real head)

Functions:

- Runs Government
- Departments Implements Policies
- Takes Decisions Administers Law and
- Order

JUDICIARY
Interprets Laws & Ensures Justice

Levels:

Supreme Court

High Courts

District Courts

Functions:

- Protects Fundamental Rights
- Settles Disputes
- Checks Misuse of Power

Makes Laws → **Implements Laws** → **Ensures Justice**

Checks & Balances among these Institutions

15

Vocabulary

Time to work on 'Vocabulary'

Synonyms/Closest Word

1 Overseer

  (a) Furnace   (b) Financer   (c) Fiancé   (d) Supervisor

2 Drench

  (a) Lead   (b) Soak   (c) Coarse   (d) Pedestal

3 Alighted

  (a) Climb   (b) Down   (c) Descend   (d) Fly

4 Stirring

  (a) Wander   (b) Move   (c) Dull   (d) Sleep

5 Plead

  (a) Beg   (b) Claim   (c) Monarch   (d) Abandon

Antonyms/Farthest Word

1 **Thrall**

   (a) Master   (b) Captive   (c) Father   (d) Son

2 **Enormous**

   (a) Cosmic   (b) Whopping   (c) Tiny   (d) Gigantic

3 **Rapt**

   (a) Spellbound   (b) Captivated   (c) Lost   (d) Uninterested

4 **Garish**

   (a) Flashy   (b) Harsh   (c) Tasteful   (d) Bilious

5 **Whack**

   (a) Thump   (b) Knock   (c) Hit   (d) Revive

Answers

Synonyms/Closest Word

1 **Overseer**

   (a) Furnace   (b) Financer   (c) Fiancé   (d) **Supervisor** ✓

2 **Drench**

   (a) Lead   (b) **Soak** ✓   (c) Coarse   (d) Pedestal

3 **Alighted**

   (a) Climb   (b) Down   (c) **Descend** ✓   (d) Fly

4 **Stirring**

   (a) Wander   (b) **Move** ✓   (c) Dull   (d) Sleep

5 **Plead**

   (a) **Beg** ✓   (b) Claim   (c) Monarch   (d) Abandon

Answers

Antonyms/Farthest Word

1 Thrall

(a) **Master** ✓   (b) Captive   (c) Father   (d) Son

2 Enormous

(a) Cosmic   (b) Whopping   (c) **Tiny** ✓   (d) Gigantic

3 Rapt

(a) Spellbound   (b) Captivated   (c) Lost   (d) **Uninterested** ✓

4 Garish

(a) Flashy   (b) Harsh   (c) **Tasteful** ✓   (d) Bilious

5 Whack

(a) Thump   (b) Knock   (c) Hit   (d) **Revive** ✓

Editing

Editing is an important skill among many others learnt while learning a language, like reading, writing etc.

Let's have a look at some of the tips and tricks one requires to master the editing skills.

1. Read the passage thoroughly and check for anything unusual or unsuitable in the lines.

2. Knowledge of parts of speech is important as-

   (a) It helps you check if the word written does the function it's supposed to do.

   (b) Check if its placement is correct.
   Example- A beauty woman is standing there. Here we see that 'beauty' is a noun and 'woman' is also a noun. A noun cannot be placed in the position of an adjective to describe another noun.
   Correct- A beautiful woman is standing there. (an adjective is placed before a noun to describe it.)

   (c) Other errors could be regarding appropriate use of determiners/ articles. Always check if they are used on the basis of number or quantity of the noun.

3. Sometimes the errors we find might be based on tenses or verb forms. So read the passage and check for some keywords like:

   (a) yesterday, ago, last year, those days, once upon a time etc,- **indicators of past tense**- choose past verbs in such cases.

   (b) these days, currently, now a days etc,- **indicators of present tense**- use present verb forms in such cases.

4. Check for the spellings or unnecessary words in phrases or phrasal verbs.

5. Check use of conjunctions as per their function. Also check whether they correlate or coordinate.

6. Brush up your knowledge of other vital topics of grammar like reported speech, voice or clauses.

The following passage has not been edited. There is one error in each line. Write the error along with its correction in the space provided.
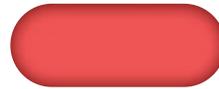
	Incorrect	Correct
I had to went out despite the (a)		
heavy rain outside to got some medicines. (b)		
Although the symptoms was not as (c)		
pronounced as they were at the morning, (d)		
the doctor had instructs me to (e)		
be regular with mine dosage. (f)		
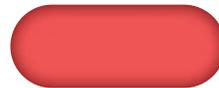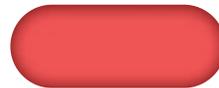
ANSWERS

	(a)	(b)	(c)	(d)	(e)	(f)
Incorrect	went	got	was	at	instructs	mine
Correct	go	get	were	in	instructed	my

Miscellaneous Reasoning

Brainstormer

There are 8 members in a family namely Alpha, Beta, Gama, Delta, Theta, Pi, Sigma and Omega in which there are 2 married couples. Among the 8 members there are 2 lawyers and 2 artists. Delta is the daughter-in-law of Sigma. Pi is the brother of any of the two artists. Omega, who is the artist, is the sister of Alpha. No female is a lawyer. Delta is an artist. Gama is the husband of Sigma. Theta is the only son of Sigma. Beta is the lawyer and is the brother of Gama. Alpha is the lawyer and is the son of Theta.

Q1. If Pi is the brother of Omega, how many children does Theta has?

1. 6
2. 3
3. 5
4. 2

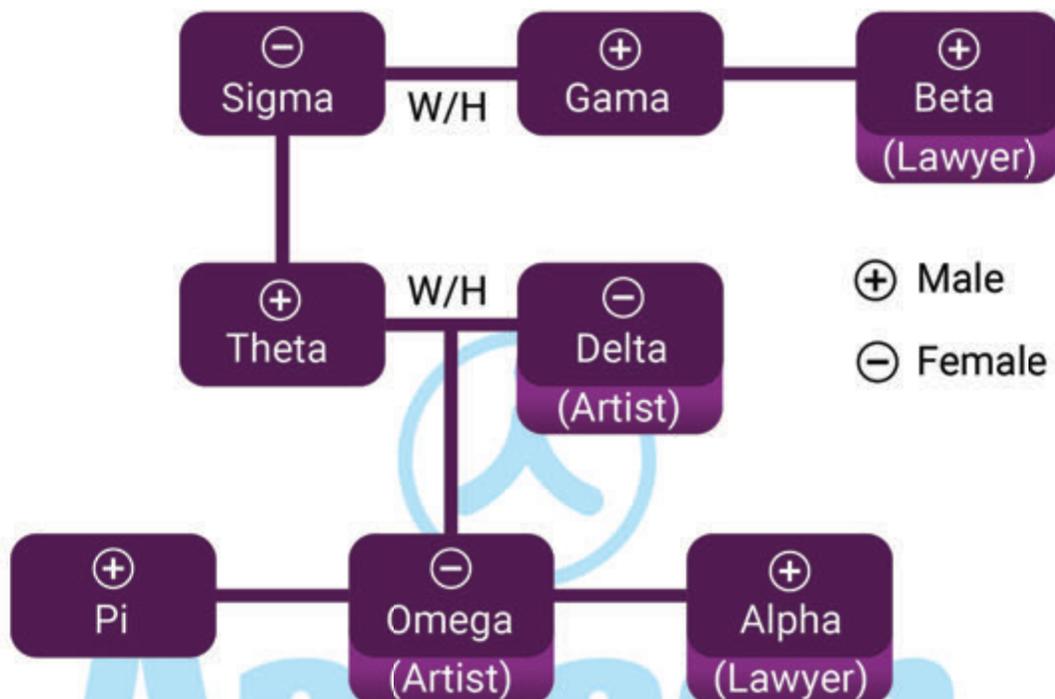**Q2.** How many female members are there in the family?

1. Three
2. Four
3. Five
4. Six

Q3. Which pair would be grandsons of Sigma?

1. Delta and Alpha
2. Omega and Theta
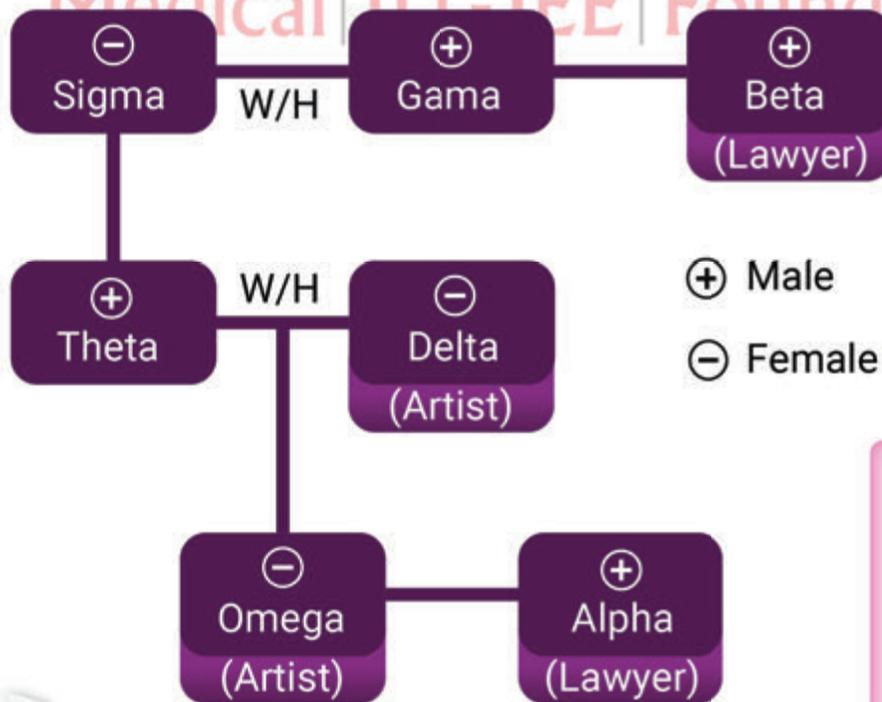3. Alpha and Pi
4. Beta and Gama

1. **2**

```
┌──────────┐        ┌──────────┐        ┌──────────┐
│    ⊖     │  W/H   │    ⊕     │        │    ⊕     │
│  Sigma   │────────│  Gama    │────────│  Beta    │
└────┬─────┘        └──────────┘        │ (Lawyer) │
     │                                  └──────────┘
     │
┌────┴─────┐  W/H   ┌──────────┐            ⊕  Male
│    ⊕     │        │    ⊖     │
│  Theta   │────────│  Delta   │            ⊖  Female
└──────────┘   │    │ (Artist) │
               │    └──────────┘
┌──────────┐ ┌─┴────────┐ ┌──────────┐
│    ⊕     │ │    ⊖     │ │    ⊕     │
│   Pi     │─│  Omega   │─│  Alpha   │
└──────────┘ │ (Artist) │ │ (Lawyer) │
             └──────────┘ └──────────┘
```

2. **1**
3. **3**

```
┌──────────┐        ┌──────────┐        ┌──────────┐
│    ⊖     │  W/H   │    ⊕     │        │    ⊕     │
│  Sigma   │────────│  Gama    │────────│  Beta    │
└────┬─────┘        └──────────┘        │ (Lawyer) │
     │                                  └──────────┘
┌────┴─────┐  W/H   ┌──────────┐            ⊕  Male
│    ⊕     │        │    ⊖     │
│  Theta   │────────│  Delta   │            ⊖  Female
└────┬─────┘        │ (Artist) │
     │              └──────────┘
┌────┴─────┐ ┌──────────┐
│    ⊖     │ │    ⊕     │
│  Omega   │─│  Alpha   │
│ (Artist) │ │ (Lawyer) │
└──────────┘ └──────────┘
```

NOTE

Relation of Pi is not confirm either Pi is brother of Omega or Delta.

23

Brain Teaser

Quiz

1.

What will replace Question Mark?

If

8 = 80
5 = 35
9 = 99
4 = 24

then, 6 = ?

2.

Can you solve this?

May = 358
June = 4610
July = 4711
August = 6814
September = ?

1.

$8 \times (8 + 2) = 8 \times 10 = 80$

$5 \times (5 + 2) = 5 \times 7 = 35$

$9 \times (9 + 2) = 9 \times 11 = 99$

$4 \times (4 + 2) = 4 \times 6 = 24$

$\therefore 6 \times (6 + 2) = 6 \times 8 = 48$

2.

May = 358

First digit tells the number of letters in the given month

June = 4610

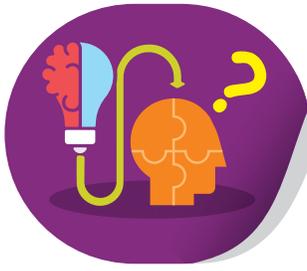Second digit tells the order of the month in a year

July = 4711

Remaining number at the end is the sum of the first two digits.

August = 6814

September = 9918

Seating Arrangement and Ranking Test

Q.1 Ram is fifth from the left end and Sita is ninth from the right end in a row of persons. If there are ten persons between Ram and Sita, then how many persons are there in the row ?

(a) 24
(b) 25
(c) 26
(d) 23

Q.2 Q is taller than M but smaller than P. E is taller than R but smaller than M. If they are arranged according to their height in descending order, then who will be at third position from starting ?

(a) P
(b) E
(c) M
(d) R

Answer (Quiz Time)

A.1

(a) 24

Ram	Mid	Sita
5	10	9

$\Rightarrow$ Total = Left Rank + Right Rank + Mid Value

Total = 5 + 9 + 10

Total = 24

A.2

(c) M

Correct order is

P > Q > M > E > R
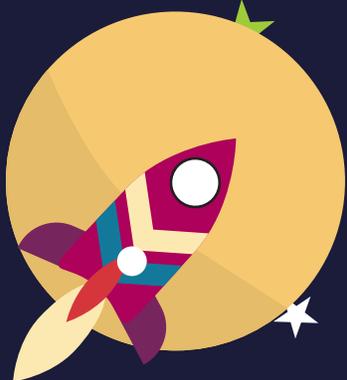
Happy Birthday

Galileo Galilei
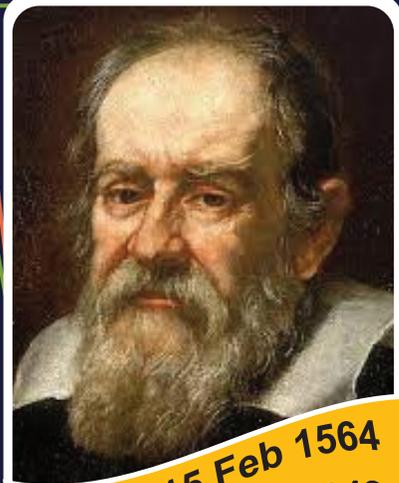
Born - 15 Feb 1564
Died - 08 Jan 1642

Galileo Galilei is a famous Italian Astronomer, Mathematics Professor, and Physicist who first used the telescope to study space. His contributions in Science and Mathematics still resonate today, and became the basis for different ideas that sprung up during the scientific revolution during and after his time.

NEET 2025 Wasn't Easy. Our Results Say Otherwise.

5 AAKASHIANS IN TOP 10 AIR NEET(UG) 2025

675/720 **AIR 9** — HARSH KEDAWAT — 1 YEAR CLASSROOM

681/720 **AIR 3** — KRISHANG JOSHI — MAHARASHTRA TOPPER — 3 YEAR CLASSROOM

682/720 **AIR 2** — UTKARSH AWADHIYA — MADHYA PRADESH TOPPER — 3 YEAR CLASSROOM

680/720 **AIR 5** — AVIKA AGGARWAL — 3 YEAR CLASSROOM — ALL INDIA FEMALE TOPPER

675/720 **AIR 10** — AARAV AGRAWAL — 1 YEAR CLASSROOM

OUR NATIONAL TOPPERS IN NEET (UG) 2025

674/720 AIR **11** Arsh Gandhi — 2 Year Classroom

670/720 AIR **16** Rachit S Chaudhuri — 2 Year Classroom

666/720 AIR **20** Rupayan Pal — 1 Year Classroom

665/720 AIR **23** Gourav Yadav — 3 Year Classroom

665/720 AIR **25** Abhijeet Kulhari — 1 Year Classroom

663/720 AIR **28** Himank Baghla — 2 Year Classroom

663/720 AIR **29** Tanisha — 3 Year Classroom

& many more...

Our Problem Solvers shine bright in JEE (Advanced) 2025

Our Top 100 AIR

Advay Mayank — AIR 36 — Aakash Invictus Classroom Program

Rujul Garg — AIR 41 — 2 Years Classroom

Arush Anand — AIR 64 — Aakash Invictus Classroom Program

Shreyas Lohiya — AIR 68 — Aakash Invictus Classroom Program

Kotha D Reddy — AIR 74 — 2 Years Classroom

Krishna Agrawal — AIR 75 — 3 Years Classroom

Divyant Jayakumar — AIR 80 — Aakash Invictus Classroom Program

Aayush Agarwal — AIR 90 — 4 Years Classroom

Akash Deep — AIR 99 — 2 Years Classroom

Aakashians Create History in International Olympiads
(Classroom Program Students)

IBO 2023

Gold Medalists

34th International Biology Olympiad

Dhruv Advani

Rohit Panda

Chirag Falor	Dhiren Bhardwaj	Anshul	Amritansh Nigam	Prachi Jindal	Tanishka Kabra
IOAA 2019 Gold Medalist	**IBO 2021** Silver Medalist	**IBO 2021** Silver Medalist	**IBO 2022** Silver Medalist	**IBO 2022** Silver Medalist	**IChO 2022** Silver Medalist
International Olympiad on Astronomy & Astrophysics	32nd International Biology Olympiad	32nd International Biology Olympiad	33rd International Biology Olympiad	33rd International Biology Olympiad	54th International Chemistry Olympiad

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1484 Students Scored Above MAS

420 Classroom Students **Qualified in NSEs* 2024-25**

(Group A & B)	(Group A & B)	(Group A & B)	(Group A & B)	
49 NSEA*	**229** NSEB*	**70** NSEC*	**38** NSEP*	**34** NSEJS*

Aakashians Qualified for INO-2025

Krishna Agrawal	**Mohit Shekher Shukla**	**Utkarsh Awadhiya**	**Rupayan Pal**	**Devansh Garg**	**Aaron Thakkar**
NSEA | NSEP | NSEC	NSEA | NSEP | NSEC	NSEB | NSEP | NSEC	NSEC | NSEB | NSEP	NSEJS	NSEJS

and many more...

*NSEA-National Standard Examination in Astronomy | NSEB-National Standard Examination in Biology | NSEC-National Standard Examination in Chemistry
NSEP-National Standard Examination in Physics | NSEJS-National Standard Examination in Junior Science | INO-Indian National Olympiad

Aakashians Qualified for RMO 2024

899 Classroom Students **Qualified in IOQM 2024**

Joish Achyuta — Class - VIII
Dhanush Damu — Class - IX
Arnav Singh — Class - X
Pranit Goel — Class - XI
Aayush Agarwal — Class - XII

and many more...

Aakashians Qualified for INMO 2025

161 Classroom Students **Qualified in RMO 2024-25**

Kotha D Reddy — Reg. No. 00006657265
Abhipraya Verma — Reg. No. 00010407513
Aditya Singh — Reg. No. 00012631688
Rujul Garg — Reg. No. 00005153903
Mohit Shekher Shukla — Reg. No. 00006093814

and many more...

Aakashians Qualified for OCSC/IMOTC-2025

25 Classroom Students **Qualified in INOs 2025**

Pranit Goel — Qualified INMO
Harshit Singh — Qualified INJSO
Subhrojit Paul — Qualified INBO
Mohit Shekher Shukla — Qualified INChO
Rujul Garg — Qualified INPhO
Aditya Singh — Qualified INAO Jr

and many more...

Aakashians Qualified for Merit Certificate

1019 Classroom Students **Qualified in IMO (Level-I) 2023-24**

Intl. Rank **1** — Prisha Miglani — Class - IX
Intl. Rank **2** — Sushant Agarwal — Class - X
Intl. Rank **4** — Ekaashar Gupta — Class - IX
Intl. Rank **7** — Harshit Singh — Class - VIII

438 Classroom Students **Qualified in IMO (Level-II) 2024**

and many more...

Aakashians Qualified for Merit Certificate

4902 Classroom Students **Qualified in NSO (Level-I) 2024-25**

Intl. Rank **2** — Meghav Ladani — Class - X
Intl. Rank **2** — Anubhab Manna — Class - VIII
Intl. Rank **3** — Arnav Gupta — Class - IX
Intl. Rank **7** — Parshti Bajpai — Class - IX
Intl. Rank **10** — Shreya — Class - VIII

and many more...

* RMO -Regional Mathematical Olympiad | **INMO**-Indian National Mathematical Olympiad | **IOQM –** Indian Olympiad Qualifier in Mathematics | **NSO** – National Science Olympiad
IMO - International Mathematics Olympiad | **INOs** - Indian National Olympiads | **OCSCs** - Orientation cum Selection Camps | **IMOTC** - International Mathematical Olympiad Training Camp