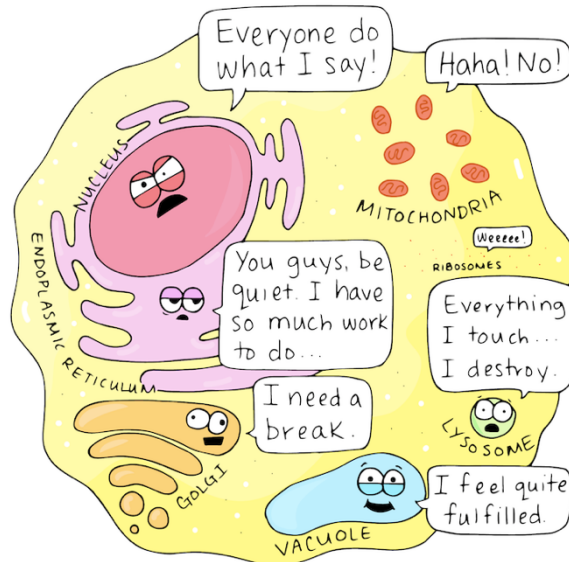


GYAN BHARATI SCHOOL

QUEST.....

Monthly Science and Mathematics Magazine

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If organelles could talk.

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IDENTIFY ME.....



- I was born on July 10, 1856, and died on January 7, 1943.
- My father was a Priest and mother was an Inventor.
- I had photographic memory and could memorize books, images and 3D structures.
- As a teenager, I contracted Cholera, was bedridden for 9 months and almost died.
- I was fascinated by electricity and moved to the US in 1884 to work for Thomas Edison but left after he did not pay me the wager I won for improving his DC Motor.
- Edison called my ideas “splendid” but “utterly impractical”.
- My rivalry with Edison was called “The War of Currents”.
- I spoke 8 languages and have filed more than 300 patents.
- I created the first neon lights by bending test tubes, and invented ways of using and harnessing light by distributing it.
- It was I who discovered Radio transmission and not Marconi but it was proved in the court two years after I died.
- Years after I died my statue was erected in Silicon Valley. It is equipped with free wi-fi.
- The SI unit of magnetic flux is named after me.

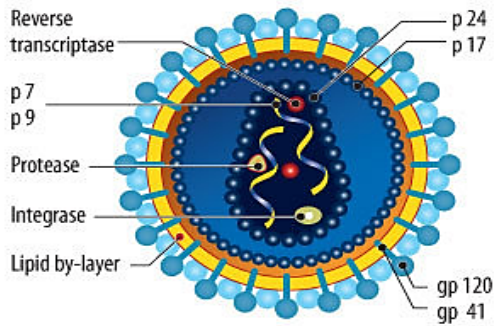


World AIDS Day 1st of December

Symptoms and spread of HIV and AIDS

Human immunodeficiency virus (HIV) causes Acquired Immune Deficiency Syndrome (AIDS)

The AIDS virus



Human immunodeficiency virus (HIV) penetrates the human body ▶ weakens the immune system ▶ affects cells that fight infection (T-lymphocytes or CD4) ▶ The body is unable to fight infection ▶ This results in one or several serious diseases

Symptoms

- Fever lasting over a month
- Diarrhea lasting over a month
- Unexplainable weight loss of 10 percent of body mass or more
- Protracted pneumonia
- Constant cough
- Protracted and relapsing virus, bacterial and parasitic diseases
- Sepsis
- Lymph nodes remain swollen for over a month
- Sub-acute encephalitis

AIDS is the final stage of the disease

- Cancerous AIDS (Kaposi's sarcoma and brain lymphoma)
- Neuro-AIDS (various diseases of the central nervous system and peripheral nerves)
- Numerous AIDS-related infections

! The virus can remain inert inside the human body for 10-12 years

Diagnostics

AIDS centers offer free tests to detect virus antibodies using immune-ferment analysis

How the infection spreads



Unprotected sex



Joint use of syringes, needles and other injection systems



The use of non-sterile tattooing and skin piercing instruments



The use of other people's razors and tooth brushes with blood residue



HIV-positive mothers can infect their babies during pregnancy, birth and while breast-feeding



Treatment and diagnostic methods, including surgery, blood transfusion, injections, etc.

Treatment

No cure for AIDS has been found. Some treatments make it possible to seriously extend the lifespan of HIV-positive individuals and to improve their quality of life

! After the virus enters the bloodstream, it takes the human body between 25 days and three months to create the required number of antibodies necessary for detection in blood tests. Patients may test negative during this "window period."



3 STEPS TO MORE MINDFUL EATING

1 Before you decide to eat, ask yourself "Why am I eating?" Make sure hunger is what drives your decision, not stress or boredom. Stop eating when you are no longer hungry.



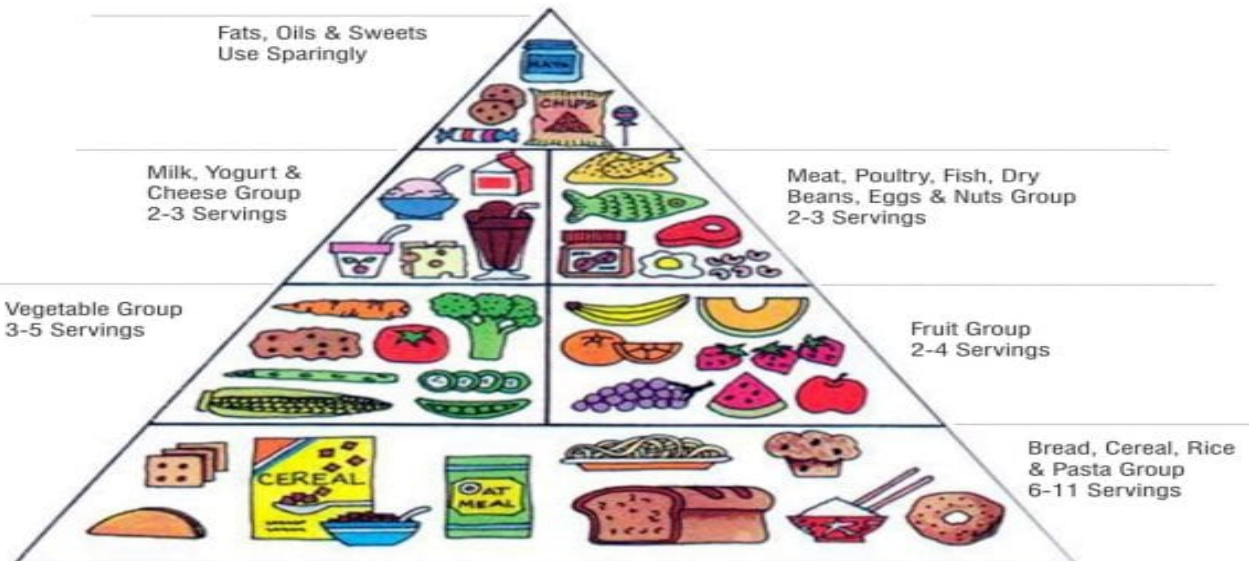
2 As you take each bite, savor the flavor of the food.



3 The way you serve your food matters. Put it on a plate, and then sit down to eat it instead of eating on the run out of a bag.



BALANCED DIET



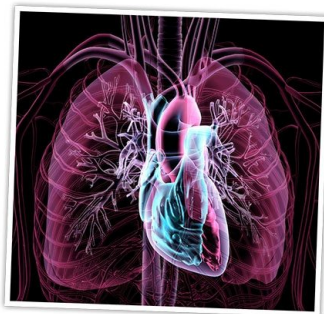
Balance Diet is one which provides all the nutrients in required amounts and proper proportion

AMAZING FACTS ABOUT THE HUMAN BODY

1. Your mouth produces about **one litre of saliva** each day!
2. Your brain is sometimes **more active when you're asleep** than when you're awake.



3. Laid end to end, an adult's blood vessels could **circle Earth's equator four times!**
4. The word "**muscle**" comes from Latin term meaning "**little mouse**", which is what Ancient Romans thought flexed bicep muscles resembled.
5. Bodies give off a **tiny amount of light** that's too weak for the eye to see.
6. The average person has **67 different species of bacteria** in their stomach.
7. You lose about **4kg of skin cells** every year!
8. Babies don't shed tears until they're **at least one month old**.



9. Information zooms along nerves at about **400kmph!**
10. The human heart beats **more than three billion times** in an average lifespan.
11. Your left lung is about **10 percent smaller** than your right one.
12. **Human teeth** are just as strong as shark teeth.
13. Scientists estimate that the nose can recognise **a trillion different scents!**
14. Humans are the only species **known to blush**.
15. Your blood makes up about **eight percent of your body weight**.

Do it yourself.....

How to use your "Green Waste" to "Nourish your Plants" in "Just Two Minutes"

Collect a day's Green Waste in a bowl



Put them in a Mixer Jar, add some Water and Run Mixer for a Minute. You get Green Slurry



Mix this Green Slurry in to a Bucket of Water meant to water plants. This Green Slurry becomes very diluted. Water Your Plants with this Now



Diluted Slurried Water is absorbed just like normal water with No Trace of Green Waste.



It Gives Nourishment to Plants and Keep them Healthy, Full of Leaves, Flowers and Fruits



BREAKING NEWS.....

- A new fabrication process for transparent ultra-thin silver films has been developed by researchers headed by **Professor Anjana Devi** and **Nils Boysen** from the **Bochum-based research group Inorganic Materials Chemistry**, in collaboration with the group of **Professor Thomas Riedl** from the **Chair of Electronic Devices** in **Wuppertal at Ruhr-Universität Bochum** and the **University of Wuppertal**.



- The material may help build highly efficient solar cells and light-emitting diodes.
- The team, published an article on the new synthesis method in the journal *Angewandte Chemie*.

MORE SCIENCE NEWS CAN BE ACCESSED THROUGH THE FOLLOWING LINKS.....

PLANTS & ANIMALS



[Bionic Mushrooms' Fuse Nanotech, Bacteria and Fungi](#)

EARTH & CLIMATE



[Graphene Takes a Step Towards Renewable Fuel](#)



[Harvesting Renewable Energy from the Sun and Outer Space at the Same Time](#)

FOSSILS & RUINS



[Ancient DNA Evidence Reveals Two Unknown Migrations from North to South America](#)

COMPUTERS & MATH



[Batteryless Smart Devices Closer to Reality](#)

Answer to- Identify Me - Nikola Tesla

Maryam Mirzakhani



- **Maryam Mirzakhani** was born on **12th May 1977** in Tehran, Iran.
- In 2014, Maryam Mirzakhani became the **first ever female** mathematician to receive the **Fields Medal**, widely regarded as the **Noble Prize of Mathematics** since the award was established in 1936.
- She has contributed to the fields of **geometry** and **dynamical system**, particularly in understanding the **symmetry of curved surfaces**.
- Gyan Bharati School pays tribute to the famous mathematician and Stanford University professor, who **passed away** on **14 July 2017** at the age of 40 years.

QUADRATIC EQUATION (Concepts)

Nature of roots of a quadratic equation

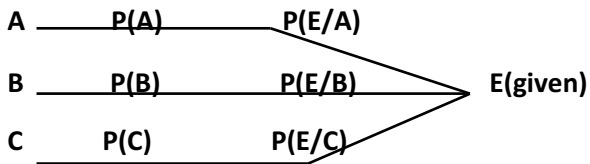
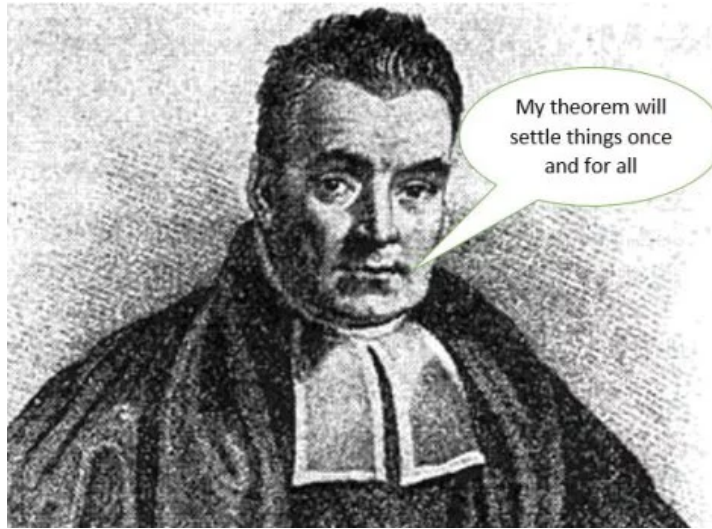
The roots of the quadratic equation $ax^2 + bx + c = 0$, $a \neq 0$ are given by $x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$,

where $b^2 - 4ac$ is called the discriminant of the equation and is denoted by D .

- If $b^2 - 4ac > 0$, then the equation has two distinct real roots.
- If $b^2 - 4ac = 0$, then the equation has two equal real roots.
- If $b^2 - 4ac < 0$, then the equation does not have any real roots.

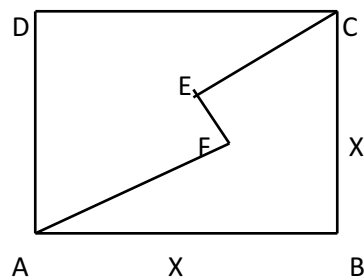
PROBABILITY (Concepts)

BAYE'S THEOREM



$$P(A/E) = \frac{P(A) \cdot P(E/A)}{P(A) \cdot P(E/A) + P(B) \cdot P(E/B) + P(C) \cdot P(E/C)}$$








PUZZLE CORNER



If $AF = 12$ cm and $FE = 3$ cm and $EC = 9$ cm, and $\angle AFE$ AND $\angle FEC$ ARE RIGHT ANGLES. THEN FIND X.

QUIZ TIME



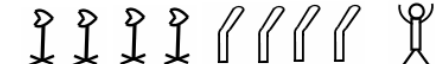

1. The Egyptians used a numeral system based on the number ten, and written using hieroglyphs as follows:

Staff	Heelbone	Scroll	Flower	Finger	Fish	Man
						
1	10	100	1,000	10,000	100,000	1,000,000

The Egyptian Pharaoh Khufu oversaw construction of the the Great Pyramid of Giza.

It is estimated that the outer mantle of this pyramid was composed of 144,000 casing stones.

Which of the following set of hieroglyphics represents this number of casing stones?

- A 
- B 
- C 
- D 

2. In a bookstore, two books originally had the same price.

The price of the first CD was reduced by 16%

And the price of the other one was increased by 4%.

After this change, the prices of the two CDs differed by Rs.5.00/-

What was the original price of each book?

ANSWERS TO PUZZLE CORNER

$$X = 15$$

ANSWERS TO QUIZ TIME

1. $144,000 = 100,000 + 40,000 + 4,000$

100,000 is represented by one fish.

40,000 is represented by four fingers.

4,000 is represented by four flowers.

So, the correct answer is D. $144,000 = 100,000 + 40,000 + 4,000$

2. Let the original price of each book be Rs. X

The price of the first book was reduced by 16%, so it is now Rs.(0.84X)

And the price of the other one was increased by 4%, so it is now Rs.(1.04X)

So the price difference is $1.04X - 0.84X = 0.2X$

And we know that it is Rs. 5.00

So $0.2X = \text{Rs. } 5$

$\Rightarrow X = \text{Rs. } 25$
