Rapid Fire Current Affairs

Prayan Rover Completes Tasks and Enters Sleep Mode

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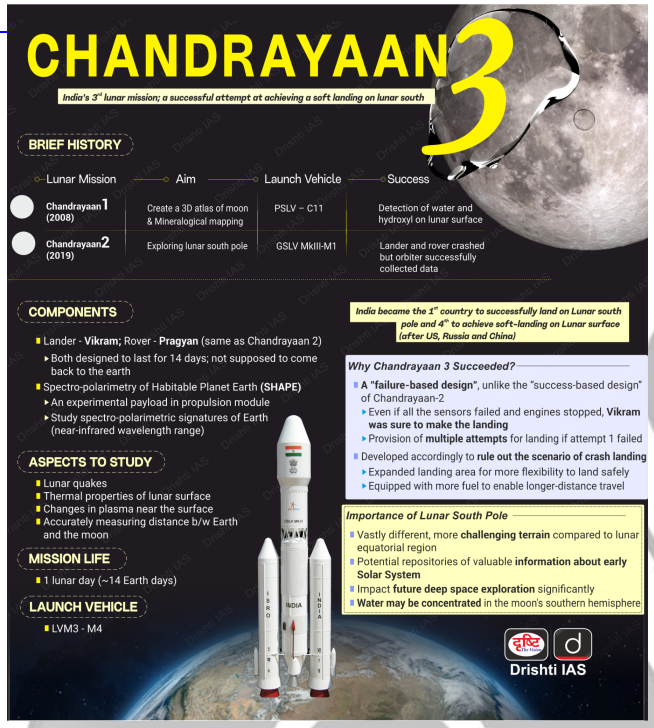

- Pragyan, part of **Chandrayaan-3**, has **entered sleep mode for the lunar night, scheduled to awaken on September 22, 2023.**
    - **One lunar day** is equivalent to about **14 days on Earth**.
    - If the rover doesn't awaken, it will remain on the **Moon as India's lunar ambassador.**
- The **ISRO** indicated that the process of putting the rover to sleep is to ensure its **survival during the lunar night** when temperatures **can plummet below -200°C.**
- The lander and rover rely on a solar panel to generate power and charge the battery during the lunar day, while they must endure the harsh lunar night conditions.

Read more: Chandrayaan-3 Successfully Lands on Moon's South Pole

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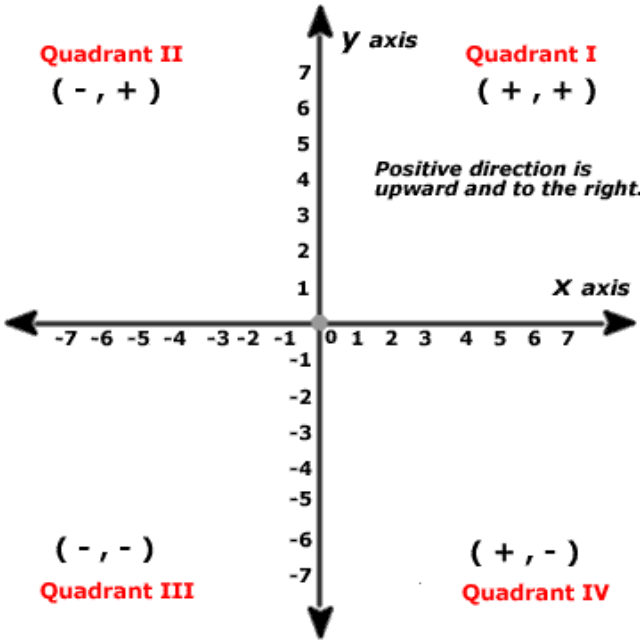
Karnataka Takes Steps to Address Dementia

- Karnataka is committed to prioritizing dementia **as a health concern.**
- Dementia is an **umbrella term encompassing diseases that affect memory, cognitive abilities**, and behaviour, hindering daily activities. Alzheimer's disease **is the most common type of dementia.**
    - Recent estimates indicate a **7.4% dementia prevalence rate among Indians aged 60 and above**, totaling approximately **9 lakh individuals.** This number is expected to surge **from 88 lakh in 2016 to 1.7 crore by 2036.**

- **Risk factors** for dementia include smoking, excessive **alcohol consumption, physical inactivity, social isolation, head injuries, and conditions like** diabetes**, hearing loss, depression, obesity, and** hypertension.

Read more: Dementia **,** Alzheimer Disease

Significance of Cartesian Coordinates in Modern Geometry



The **Cartesian coordinate system**, introduced by the **French philosopher and mathematician Rene Descartes,** revolutionized the **way we represent points in space**.

- This system utilizes sets of numbers to specify the location of a point in relation to perpendicular planes.
    - In two dimensions, it relies on a **pair of numbers (x and y)** to pinpoint a specific location on a plane, akin to how **latitude and longitude locate a city on Google Maps.**
    - For three-dimensional spaces, **a third number (z) is added to determine the point's exact position.**
- It has not only bridged the gap between algebra and geometry but also gave birth to **analytic geometry and** found widespread applications in fields like **astronomy**, **engineering, computer graphics,** and spatial data representation.

Shared Neural Mechanisms in Spatial Navigation and Social Interaction in Bats

Recent research reveals the **neural processes** underlying both **spatial navigation and social interaction in Egyptian fruit bats.**

- These mammals, along with humans and various other species, **rely on the hippocampus** (a part of the brain) **to navigate their surroundings,** forming a **mental 'map.'**
- This study revealed that bats establish resting spots within their environment and follow very similar trajectories when traveling among them. The bats also displayed strong **preferences for interacting with specific "friend" bats,** highlighting the intriguing **overlap between spatial navigation and social dynamics in these fascinating creatures.**

Read more: Nipah virus and Fruit Bat

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