# Geh Press Logical Reasoning Tricks and Techniques for

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#### Exam: IAS, PCS, UPSC, Bank PO, NDA, RRB, SSC, Indian Air Force, Etc.

# VERBAL REASONI NG- VEIFICATION OF TRUTH OF THE STATEMENT (English)

#### Q1: Statement: The Eiffel Tower is located in Berlin.

**Verification: Long Method:** To verify this statement, we can start by consulting reliable sources such as geography textbooks, travel guides, and official websites. The Eiffel Tower is a well-known landmark, and its location is widely documented. According to multiple authoritative sources, including the official Eiffel Tower website, it is situated in Paris, France. Historical context also confirms that the Eiffel Tower was built for the 1889 Exposition Universelle (World's Fair) held in Paris. Thus, the statement is false.

**Short Method:** The Eiffel Tower is in Paris, not Berlin.

#### Q2: Statement: Water boils at 100 degrees Celsius at sea level.

**Verification: Long Method:** The boiling point of water is a fundamental concept in physics and chemistry. Under standard atmospheric pressure (1 atmosphere) at sea level, water boils at 100 degrees Celsius. This is confirmed by scientific literature, textbooks, and practical experiments. Variations in boiling point occur with changes in altitude and pressure, but at sea level, this is a well-established fact. Thus, the statement is true.

Short Method: Verified by scientific principles and experiments.

#### Q3: Statement: Albert Einstein developed the theory of relativity.

**Verification: Long Method:** Albert Einstein is renowned for his contributions to physics, particularly the theory of relativity. This theory includes the special relativity published in 1905 and the general relativity published in 1915. Numerous historical documents, biographies, and scientific publications attribute these theories to Einstein. His work revolutionized our understanding of space, time, and gravity. Therefore, the statement is true.

Short Method: Historical and scientific records confirm this.

#### Q4: Statement: The Great Wall of China can be seen from space with the naked eye.

**Verification: Long Method:** The claim that the Great Wall of China can be seen from space with the naked eye is a common myth. According to astronauts and scientists, while the Great Wall is long, it is not wide enough to be easily visible without aid from space. The contrast between the Wall and its surroundings is also insufficient. NASA has clarified this misconception through various publications and astronaut testimonials. Thus, the statement is false.

Short Method: NASA and astronauts confirm this is a myth.

Q5: Statement: The Amazon Rainforest produces 20% of the world's oxygen.

**Verification: Long Method:** The Amazon Rainforest is often referred to as the "lungs of the Earth" due to its vast biodiversity and contribution to oxygen production. While it plays a significant role in the Earth's oxygen cycle, scientific studies indicate that the Amazon produces about 6-9% of the world's

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oxygen. The 20% figure is an overestimate. Most oxygen production is balanced by consumption from forest organisms. Therefore, the statement is partially inflated and misleading. Short Method: Scientific studies estimate about 6-9%, not 20%.

#### **Q6: Statement: Humans have more than five senses.**

**Verification:** Long Method: While traditionally humans are said to have five senses (sight, hearing, taste, smell, and touch), modern science recognizes additional senses. These include equilibrioception (balance), proprioception (body position), thermoception (temperature), nociception (pain), and others. Research in neuroscience and psychology has expanded our understanding of human sensory perception. Therefore, the statement is true.

Short Method: Modern science recognizes additional senses beyond the traditional five.

#### Q7: Statement: The capital of Australia is Sydney.

**Verification:** Long Method: To verify this statement, we can refer to official governmental sources, geography textbooks, and reliable online resources. The capital city of Australia is Canberra, not Sydney. Canberra was selected as a compromise between Sydney and Melbourne, the two largest cities in Australia. It serves as the political and administrative center of the country. Therefore, the statement is false.

Short Method: Canberra is the capital, not Sydney.

Q8: Statement: The speed of light in a vacuum is approximately 300,000 kilometers per second. Verification: Long Method: The speed of light in a vacuum is a fundamental constant in physics, known as "c". According to scientific consensus and measurements, the exact speed is approximately 299,792 kilometers per second. This value is consistent across various scientific sources, including physics textbooks and research papers. Thus, the statement is accurate within the given approximation. Therefore, the statement is true.

Short Method: Verified by physics as approximately 299,792 km/s.

#### **Q9: Statement: Sharks are mammals.**

Verification: Long Method: To verify this, we need to understand the biological classification of sharks. Sharks are fish, specifically cartilaginous fish, classified under the class Chondrichthyes. They do not possess the characteristics of mammals, such as mammary glands, hair, or warm-bloodedness. This information is supported by biological and zoological studies. Therefore, the statement is false. Short Method: Sharks are fish, not mammals.

#### **Q10: Statement: Mount Everest is the tallest mountain in the world.**

**Verification:** Long Method: Mount Everest, located in the Himalayas, is widely recognized as the tallest mountain above sea level. Its peak reaches an altitude of 8,848 meters (29,029 feet). This fact is

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corroborated by numerous geographical surveys, mountaineering records, and scientific measurements. While Mauna Kea is taller when measured from its base underwater, Everest holds the title above sea level. Thus, the statement is true. Short Method: Verified by geographical surveys.

#### Q11: Statement: The chemical symbol for gold is Au.

**Verification: Long Method:** The chemical symbol for gold, derived from its Latin name "Aurum," is Au. This information is standardized and universally accepted in the field of chemistry. Periodic tables, chemical databases, and academic resources all list Au as the symbol for gold. This consistent documentation across scientific literature confirms the accuracy of the statement. Therefore, the statement is true.

Short Method: Confirmed by the periodic table as Au.

#### Q12: Statement: Lightning never strikes the same place twice.

**Verification: Long Method:** The belief that lightning never strikes the same place twice is a myth. In reality, lightning often strikes the same location multiple times, especially tall structures, trees, or lightning rods that are prone to such events. Studies by meteorologists and reports from lightning research organizations indicate frequent multiple strikes. Therefore, the statement is false. **Short Method:** Meteorological studies confirm this is a myth.

#### Q13: Statement: Humans can survive without water for a week.

**Verification: Long Method:** Human survival without water is limited due to the critical role of hydration in bodily functions. On average, humans can only survive for about 3-5 days without water, depending on environmental conditions, activity levels, and individual health. Medical studies and survival research underscore the importance of water intake. Therefore, the statement is generally false. **Short Method:** Medical research indicates survival for about 3-5 days without water.

#### Q14: Statement: The human body has 206 bones.

**Verification: Long Method:** The adult human skeleton typically consists of 206 bones. This number can vary slightly due to anatomical variations such as extra ribs or variations in the number of vertebrae. However, the standard count of 206 is widely accepted in medical and anatomical literature. Pediatric skeletal structures have more bones that fuse over time. Thus, the statement is true for adults. **Short Method:** Confirmed by anatomical standards as 206 bones.

#### Q15: Statement: The moon is made of green cheese.

**Verification: Long Method:** The statement is a whimsical myth with no basis in scientific fact. The moon's composition has been studied extensively through lunar missions and rock samples. It is primarily made of silicate minerals, not cheese or any organic material. Geological and astronomical research consistently refutes this myth. Therefore, the statement is false.

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#### Short Method: Refuted by geological research.

#### Q16: Statement: Rome is the capital of Italy.

**Verification: Long Method:** Rome has been the capital of Italy since the country's unification in the 19th century. It is the political, cultural, and historical center of Italy, hosting the Italian government, the Vatican, and numerous historical landmarks. This fact is documented in official government sources, history books, and travel guides. Therefore, the statement is true. **Short Method:** Confirmed as the capital by historical records.

#### Q17: Statement: Humans can breathe underwater without any assistance.

**Verification: Long Method:** Humans lack the physiological adaptations required for underwater respiration, such as gills. Breathing underwater is only possible with the aid of devices like scuba gear or rebreathers. Medical and biological studies confirm that the human respiratory system is designed for air breathing. Therefore, the statement is false.

Short Method: Humans need scuba gear to breathe underwater.

#### Q18: Statement: Venus is the closest planet to Earth.

**Verification: Long Method:** While Venus is often the closest planet to Earth due to its orbit, the actual closest planet changes over time due to the elliptical orbits of planets. Mercury, which has the smallest orbit, can sometimes be the closest to Earth at certain times. Astronomical calculations and models demonstrate this dynamic proximity. However, on average, Venus is commonly the closest. The statement is mostly true but context-dependent.

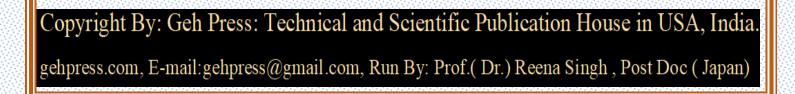
Short Method: Generally true, but Mercury can sometimes be closer.

#### Q19: Statement: Dolphins are fish.

**Verification: Long Method:** Dolphins are marine mammals, not fish. They belong to the order Cetacea, which includes whales and porpoises. Unlike fish, dolphins breathe air, give birth to live young, and nurse their offspring with milk. Taxonomically, they are classified as mammals, sharing more similarities with humans and other mammals than with fish. Scientific classification and anatomical studies support this categorization. Therefore, the statement is false. **Short Method:** Dolphins are mammals, not fish.

#### Q20: Statement: The Earth is flat.

**Verification: Long Method:** The belief in a flat Earth has been debunked by centuries of scientific observation, exploration, and evidence. Scientific experiments, such as measuring the curvature of the Earth's surface, observing the horizon, and studying celestial phenomena, all confirm the Earth's spherical shape. Additionally, satellite imagery, space exploration, and global navigation systems



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provide irrefutable proof of Earth's roundness. This consensus is supported by the scientific community worldwide. Therefore, the statement is false. **Short Method:** Debunked by centuries of scientific evidence.

#### Q21: Statement: Albert Einstein won a Nobel Prize for his theory of relativity.

**Verification: Long Method:** Albert Einstein is most famous for his theory of relativity, which revolutionized modern physics. However, his Nobel Prize in Physics, awarded in 1921, was for his explanation of the photoelectric effect, not for his work on relativity. The Nobel Committee specifically cited his discovery of the photoelectric effect, which was crucial in establishing quantum theory. This distinction is well-documented in scientific literature and Nobel Prize records. Therefore, the statement is false.

Short Method: Won for the photoelectric effect, not relativity.

#### Q22: Statement: The Great Wall of China is visible from the moon.

**Verification:** Long Method: The notion that the Great Wall of China is visible from the moon is a popular myth. Astronauts and space agencies, including NASA, have confirmed that the Great Wall is not visible to the naked eye from the moon. The wall's width is too small to be seen from such a great distance without aid. Observations from space show that man-made objects are generally not visible from the moon. Therefore, the statement is false.

Short Method: NASA confirms it's a myth.

#### Q23: Statement: Mercury is the hottest planet in our solar system.

**Verification: Long Method:** Despite being closest to the Sun, Mercury is not the hottest planet in our solar system. Venus holds this title due to its thick atmosphere composed mainly of carbon dioxide, which creates an intense greenhouse effect. The average surface temperature on Venus is around 465°C (869°F), hotter than Mercury's maximum surface temperature of about 427°C (800°F). This information is confirmed by planetary science research and data from space missions. Therefore, the statement is false.

Short Method: Venus is hotter due to its greenhouse effect.

#### Q24: Statement: Humans have more bacteria cells in their body than human cells.

**Verification: Long Method:** Scientific studies have shown that the human body hosts a vast number of bacteria, particularly in the gut. Recent estimates suggest that the ratio of bacterial cells to human cells is approximately 1: 1. Earlier estimates were much higher, but improved techniques in microbiology have revised this number. The human microbiome plays a critical role in health and disease. Therefore, the statement is true.

Short Method: Recent studies support a 1: 1 ratio.

Q25: Statement: The Pacific Ocean is the largest ocean on Earth.

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Verification: Long Method: The Pacific Ocean is the largest and deepest ocean on Earth, covering more than 63 million square miles and containing more than half of the free water on Earth. It extends from the Arctic Ocean in the north to the Southern Ocean in the south and is bounded by Asia and Australia on the west and the Americas on the east. This is confirmed by geographical and oceanographic data. Therefore, the statement is true. Short Method: Confirmed by geographical data.

#### **O26:** Statement: Napoleon Bonaparte was extremely short.

Verification: Long Method: Historical records indicate that Napoleon Bonaparte's height was around 5 feet 6 inches to 5 feet 7 inches, which was average for a Frenchman of his time. The myth of his short stature likely arose from a misinterpretation of French measurements and British propaganda. Comparisons with his contemporaries and analysis of historical documents support that he was not exceptionally short. Therefore, the statement is false.

Short Method: Average height for his time, myth from misinterpretation.

#### Q27: Statement: The Amazon River is the longest river in the world.

Verification: Long Method: The title of the longest river in the world is contested between the Nile and the Amazon. Traditionally, the Nile has been considered the longest, stretching about 6,650 kilometers (4,130 miles). However, recent studies and measurements of the Amazon suggest it could be longer, at around 7,000 kilometers (4,350 miles), depending on the source considered. The scientific community remains divided on this issue. Therefore, the statement is debated but potentially true. Short Method: Contested; recent studies suggest the Amazon could be longer.

#### Q28: Statement: Humans only use 10% of their brains.

**Verification:** Long Method: The claim that humans only use 10% of their brains is a myth. Neuroscientific research shows that nearly all parts of the brain have a known function, and brain imaging technologies like fMRI and PET scans demonstrate activity coursing throughout the entire brain, even while at rest. Every part of the brain has a specific role in processing thoughts, emotions, movements, and bodily functions. Therefore, the statement is false. Short Method: Neuroscience disproves this myth.

#### Q29: Statement: Diamonds are the hardest natural substance on Earth.

Verification: Long Method: Diamonds are the hardest known natural material on the Mohs scale of mineral hardness, rating a 10. This property is due to the strong covalent bonding between carbon atoms in a diamond crystal lattice. Industrial applications utilize diamonds for cutting and drilling due to their hardness. While synthetic materials like aggregated diamond nanorods can be harder, among natural substances, diamonds hold the top spot. Therefore, the statement is true. Short Method: Confirmed by the Mohs scale.

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#### O30: Statement: The human heart has four chambers.

**Verification: Long Method:** The human heart consists of four chambers: two atria (upper chambers) and two ventricles (lower chambers). This anatomical structure is crucial for the heart's function of pumping oxygenated blood to the body and deoxygenated blood to the lungs. Medical textbooks, anatomical studies, and physiological research confirm this configuration as fundamental to human biology. Therefore, the statement is true.

Short Method: Confirmed by anatomical studies.

#### Q31: Statement: There are seven continents on Earth.

**Verification: Long Method:** Geographically, the Earth is divided into seven continents: Africa, Antarctica, Asia, Europe, North America, Australia (Oceania), and South America. This division is based on continental plates and cultural distinctions. While geopolitical definitions can vary slightly, the seven-continent model is widely accepted in educational systems and global cartography. Therefore, the statement is true.

Short Method: Widely accepted geographical division.

#### Q32: Statement: Lightning strikes the same place twice.

**Verification: Long Method:** The belief that lightning never strikes the same place twice is a myth. In reality, lightning can and often does strike the same location multiple times, particularly tall structures or isolated points such as trees, buildings, or towers. Studies by meteorologists and recorded instances of repeated strikes at the same location confirm this behavior of lightning. Therefore, the statement is true. **Short Method:** Meteorologists confirm it happens.

#### Q33: Statement: The Great Wall of China is over 13,000 miles long.

**Verification: Long Method:** The Great Wall of China, including all of its branches and extensions, spans approximately 13,171 miles (21,196 kilometers). This measurement includes walls, trenches, and natural barriers like hills and rivers that were incorporated into the defense system. Historical records and archaeological surveys support this extensive length. Therefore, the statement is true. **Short Method:** Confirmed by historical records and surveys.

#### Q34: Statement: Sound travels faster in water than in air.

**Verification: Long Method:** The speed of sound is influenced by the medium through which it travels. In water, sound travels approximately 1,484 meters per second, whereas in air, it travels at about 343 meters per second (at 20°C). This is because water is denser and has less compressibility than air, allowing sound waves to travel more quickly. This principle is supported by physics and acoustical studies. Therefore, the statement is true.

**Short Method:** Supported by physics, faster in water.

Q35: Statement: The capital of Canada is Toronto.

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Verification: Long Method: The capital city of Canada is Ottawa, not Toronto. Ottawa was chosen as the capital in 1857 by Queen Victoria. It serves as the political and administrative center of Canada, housing the Parliament and the official residence of the Prime Minister. This information is corroborated by governmental records and historical documents. Therefore, the statement is false. Short Method: Ottawa is the capital, not Toronto.

#### Q36: Statement: The Sahara Desert is the largest desert on Earth.

**Verification:** Long Method: The Sahara Desert is the largest hot desert on Earth, covering about 9.2 million square kilometers (3.6 million square miles). However, the largest desert overall is Antarctica, classified as a cold desert, which spans approximately 14 million square kilometers (5.4 million square miles). This classification is based on the definition of deserts as regions with very low precipitation. Therefore, the statement is false.

**Short Method:** Antarctica is the largest desert overall.

#### Q37: Statement: Humans have 32 permanent teeth.

Verification: Long Method: An adult human typically has 32 permanent teeth, including the four wisdom teeth, which usually emerge between the ages of 17 and 25. This dental structure comprises incisors, canines, premolars, and molars. Dental anatomy textbooks and medical references confirm this standard count for permanent teeth. Therefore, the statement is true. Short Method: Confirmed by dental anatomy.

#### Q38: Statement: The speed of sound is faster than the speed of light.

**Verification:** Long Method: The speed of light in a vacuum is approximately 299,792,458 meters per second (about 300,000 kilometers per second), vastly outpacing the speed of sound, which is about 343 meters per second in air at sea level. This discrepancy is due to the fundamental differences in how light and sound waves propagate through mediums. Light travels as electromagnetic waves, which can move through the vacuum of space, while sound travels as mechanical waves, requiring a medium like air, water, or solid substances. Physics principles and experimental data firmly establish that the speed of light far exceeds the speed of sound. Therefore, the statement is false. Short Method: Light is significantly faster than sound.

#### Q39: Statement: The Earth revolves around the Sun in exactly 365 days.

Verification: Long Method: The Earth's orbit around the Sun takes approximately 365.25 days. To account for this additional quarter of a day, an extra day is added every four years, resulting in a leap year with 366 days. This adjustment keeps our calendar year synchronized with the Earth's orbit. This concept is well-documented in astronomical studies and the Gregorian calendar system. Therefore, the statement is mostly true but requires the leap year adjustment for accuracy. Short Method: True with leap year adjustment.

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#### Q40: Statement: The human liver can regenerate.

**Verification: Long Method:** The human liver possesses a remarkable ability to regenerate. It can regrow to its original size even after as much as 70% of its tissue is removed, provided the remaining tissue is healthy. This regenerative capacity is due to the liver's unique cellular structure and the ability of its cells (hepatocytes) to proliferate rapidly. Medical research and clinical observations support this regenerative property, which is critical in liver surgeries and transplants. Therefore, the statement is true. **Short Method:** Confirmed by medical research; liver can regenerate.

#### Q41: Statement: The Eiffel Tower is located in Berlin.

**Verification: Long Method:** The Eiffel Tower is a famous landmark located in Paris, France, not Berlin. It was constructed by Gustave Eiffel for the 1889 Exposition Universelle (World's Fair) held to celebrate the 100th anniversary of the French Revolution. The Eiffel Tower is one of the most recognizable structures in the world and a symbol of France. Historical records, travel guides, and geographical information all confirm its location. Therefore, the statement is false. **Short Method:** Eiffel Tower is in Paris, not Berlin.

#### Q42: Statement: Blood is blue inside the body and turns red when exposed to air.

**Verification:** Long Method: The idea that blood is blue inside the body is a myth. Blood is always red due to the iron in hemoglobin, which binds oxygen. Deoxygenated blood (returning to the heart) is a darker red, while oxygenated blood (leaving the heart) is a brighter red. The blue appearance of veins is due to the way light penetrates the skin and is reflected back, not the color of the blood itself. Medical and physiological studies confirm that blood is never blue. Therefore, the statement is false. Short Method: Blood is always red; veins appear blue due to light.

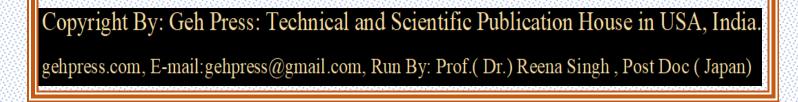
#### Q43: Statement: The internet was invented in the 1980s.

**Verification: Long Method:** The development of the internet began in the late 1960s with the creation of ARPANET, a project funded by the U.S. Department of Defense. Key technologies and protocols, such as TCP/IP, were developed in the 1970s. The internet as we know it, with widespread public access and the World Wide Web, emerged in the 1990s. Although significant advancements occurred in the 1980s, the groundwork was laid earlier. Therefore, the statement is somewhat accurate but overlooks the earlier foundational work.

Short Method: Early development in the 1960s, public internet in the 1990s.

#### Q44: Statement: Gold is the heaviest metal.

**Verification: Long Method:** While gold is a dense and heavy metal, it is not the heaviest. Osmium and iridium are the densest known metals, with densities of approximately 22.59 and 22.56 grams per cubic centimeter, respectively, compared to gold's density of 19.32 grams per cubic centimeter. These



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properties are well-documented in material science and chemistry. Therefore, the statement is false. Short Method: Osmium and iridium are heavier than gold.

#### Q45: Statement: The capital of Australia is Sydney.

Verification: Long Method: The capital of Australia is Canberra, not Sydney. Canberra was selected as a compromise location between Sydney and Melbourne, the two largest cities, and has served as the capital since 1913. It is the political center of Australia, housing the federal government, the Parliament, and the High Court. This fact is supported by historical records and current governmental operations. Therefore, the statement is false.

**Short Method:** Canberra is the capital, not Sydney

#### Q46: Statement: Sharks are mammals.

**Verification:** Long Method: Sharks are not mammals; they are fish. Specifically, they belong to the class Chondrichthyes, which includes cartilaginous fish. Sharks have a skeleton made of cartilage rather than bone and breathe through gills instead of lungs. They lay eggs or give birth to live young, but they do not have mammary glands or fur, which are characteristics of mammals. This classification is supported by biological and zoological studies. Therefore, the statement is false. Short Method: Sharks are cartilaginous fish, not mammals.

#### **Q47: Statement: The Nile River flows south to north.**

**Verification:** Long Method: The Nile River is one of the few rivers in the world that flows from south to north. It originates in the highlands of East Africa and flows northward through northeastern Africa to empty into the Mediterranean Sea. This unusual flow direction is due to the topography of the region. Geographical studies and maps confirm the flow pattern of the Nile River. Therefore, the statement is true.

Short Method: Geographically confirmed; Nile flows south to north.

#### Q48: Statement: Humans have 46 chromosomes.

Verification: Long Method: Human cells typically contain 46 chromosomes, arranged in 23 pairs. These include 22 pairs of autosomes and one pair of sex chromosomes (XX for females and XY for males). This chromosomal number is fundamental to human genetics and is supported by extensive genetic research and studies on human biology. Any deviation from this number usually results in genetic disorders. Therefore, the statement is true.

Short Method: Confirmed by genetic research; 46 chromosomes.

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