# LOGIC REASONING- STATEMENT CONCLUSION (English)

**Q1: Statement: All mammals are warm-blooded animals.**

**Conclusion: Long Method:** The conclusion follows logically from the statement, as it generalizes that all members of the category "mammals" share the characteristic of being warm-blooded. This conclusion is supported by biological taxonomy and scientific observation, which have consistently classified mammals based on their warm-blooded nature. Additionally, it aligns with the fundamental definition of mammals as vertebrate animals characterized by mammary glands, hair, and the ability to regulate body temperature internally. Thus, the conclusion accurately reflects the inherent properties of mammals as warm-blooded creatures.

**Short Method:** All mammals are warm-blooded.

**Q2: Statement: All metals conduct electricity.**

**Conclusion: Long Method:** The conclusion logically follows from the statement, as it extends the property of electrical conductivity to all members of the category "metals." This conclusion is supported by the physical properties of metals, which typically contain delocalized electrons that facilitate the flow of electric current. It aligns with scientific principles and experimental evidence demonstrating the conductive behavior of metals under various conditions. Therefore, the conclusion accurately reflects the inherent characteristic of metals as conductors of electricity.

**Short Method:** All metals conduct electricity.

**Q3: Statement: All prime numbers are odd.**

**Conclusion: Long Method:** The conclusion logically follows from the statement, as it generalizes that all prime numbers belong to the category of odd numbers. This conclusion is supported by mathematical principles, specifically the definition of prime numbers as integers greater than 1 that have no positive divisors other than 1 and themselves. Since even numbers have divisors other than 1 and themselves (such as 2), they cannot be prime. Therefore, the conclusion accurately reflects the relationship between prime numbers and odd numbers.

**Short Method:** All prime numbers are odd.

**Q4: Statement: All birds can fly.**

**Conclusion: Long Method:** The conclusion logically follows from the statement, as it asserts that the ability to fly is a universal characteristic of all members of the category "birds." This conclusion is consistent with common knowledge and biological observations, which recognize flight as a defining feature of birds. However, it is important to note exceptions such as flightless birds (e.g., ostriches, penguins) that challenge the absolute universality of the conclusion. Nevertheless, the conclusion accurately reflects the generalization that flying is prevalent among birds.

**Short Method:** All birds can fly.

**Q5: Statement: All squares are rectangles.**

**Conclusion: Long Method:** The conclusion logically follows from the statement, as it asserts that all squares fall within the broader category of rectangles. This conclusion is supported by geometric definitions, as squares meet the criteria for rectangles (quadrilaterals with four right angles) while exhibiting additional properties such as congruent sides. Therefore, squares can be considered a special case of rectangles with specific attributes. Thus, the conclusion accurately reflects the relationship between squares and rectangles.

**Short Method:** All squares are rectangles.

**Q6: Statement: All humans are mortal.**

**Conclusion: Long Method:** The conclusion logically follows from the statement, as it generalizes that mortality is a universal attribute of all members of the category "humans." This conclusion is supported by empirical evidence and philosophical reasoning, as human mortality is an intrinsic aspect of the human condition, observed across cultures and historical periods. Additionally, it aligns with biological understanding, acknowledging the finite lifespan of individual human beings. Therefore, the conclusion accurately reflects the existential reality of human mortality.

**Short Method:** All humans are mortal.

**Q7: Statement: All right angles measure 90 degrees.**

**Conclusion: Long Method:** The conclusion logically follows from the statement, as it asserts that the measurement of 90 degrees is characteristic of all members of the category "right angles." This conclusion is grounded in geometric principles, as right angles are defined as angles that measure exactly 90 degrees. Therefore, any angle meeting this criterion qualifies as a right angle. Thus, the conclusion accurately reflects the defining property of right angles in Euclidean geometry.

**Short Method:** All right angles measure 90 degrees.

**Q8: Statement: All water molecules consist of two hydrogen atoms and one oxygen atom.**

**Conclusion: Long Method:** The conclusion logically follows from the statement, as it generalizes the molecular composition of water to include two hydrogen atoms and one oxygen atom in all instances. This conclusion is supported by chemical theory and empirical data, which confirm the consistent arrangement of atoms in water molecules based on the covalent bonding properties of hydrogen and oxygen. Additionally, it aligns with the chemical formula of water (H2O), which represents the stoichiometric ratio of its constituent elements. Therefore, the conclusion accurately reflects the structural composition of water molecules.

**Short Method:** All water molecules have the formula H2O.

**Q9: Statement: All successful entrepreneurs possess strong leadership skills.**

**Conclusion: Long Method:** The conclusion logically follows from the statement, as it generalizes that strong leadership skills are a universal attribute among successful entrepreneurs. This conclusion is supported by empirical evidence and business research, which highlight the importance of leadership qualities such as vision, communication, decision-making, and team management in driving entrepreneurial success. Additionally, it aligns with anecdotal accounts and case studies of successful entrepreneurs who demonstrate effective leadership in founding and scaling their ventures. Therefore, the conclusion accurately reflects the correlation between entrepreneurship and leadership prowess.

**Short Method:** All successful entrepreneurs are strong leaders.

**Q10: Statement: All living organisms require water for survival.**

**Conclusion: Long Method:** The conclusion logically follows from the statement, as it generalizes the essentiality of water for the survival of all members of the category "living organisms." This conclusion is supported by biological principles and ecological observations, as water serves as a fundamental solvent, medium for biochemical reactions, and regulator of cellular processes across diverse forms of life. Additionally, it aligns with the universal distribution of water-dependent organisms across various ecosystems and habitats on Earth. Therefore, the conclusion accurately reflects the indispensable role of water in sustaining life.

**Short Method:** All living organisms need water to survive.

**Q11: Statement: All planets in the solar system orbit around the Sun.**

**Conclusion: Long Method:** The conclusion logically follows from the statement, as it generalizes the orbital behavior of all celestial bodies classified as "planets" within the solar system. This conclusion is supported by astronomical observations and Kepler's laws of planetary motion, which describe the gravitational dynamics governing planetary orbits around the Sun. Additionally, it aligns with the consensus among astronomers and planetary scientists regarding the heliocentric model of the solar system, wherein the Sun serves as the central gravitational anchor. Therefore, the conclusion accurately reflects the orbital relationship between planets and the Sun.

**Short Method:** All planets orbit the Sun.

**Q12: Statement: All metals expand when heated.**

**Conclusion: Long Method:** The conclusion logically follows from the statement, as it generalizes the thermal expansion behavior of all members of the category "metals" when subjected to heating. This conclusion is supported by empirical observations and scientific experiments demonstrating the expansion of metal objects upon exposure to increased temperatures. Additionally, it aligns with the fundamental principles of thermodynamics and atomic physics, which explain the response of metal lattice structures to thermal energy input. Therefore, the conclusion accurately reflects the thermal expansion properties exhibited by metallic materials.

**Short Method:** All metals expand when heated.

**Q13: Statement: All organisms require oxygen for respiration.**

**Conclusion: Long Method:** The conclusion logically follows from the statement, as it generalizes the respiratory dependency of all living entities on oxygen as a vital substrate for metabolic processes. This conclusion is supported by physiological studies and biochemical pathways elucidating the role of oxygen in aerobic respiration, whereby organisms derive energy through the oxidation of organic molecules. Additionally, it aligns with ecological observations of oxygen utilization across diverse taxa, from microorganisms to multicellular organisms. Therefore, the conclusion accurately reflects the universal requirement for oxygen in cellular respiration.

**Short Method:** All organisms respire oxygen.

**Q14: Statement: All right triangles have one right angle.**

**Conclusion: Long Method:** The conclusion logically follows from the statement, as it asserts that the presence of one right angle is a defining characteristic of all members of the category "right triangles." This conclusion is grounded in geometric definitions, as right triangles are geometric figures characterized by the inclusion of a 90-degree angle (right angle) formed between two sides. Therefore, any triangle meeting this criterion qualifies as a right triangle. Thus, the conclusion accurately reflects the geometric properties of right triangles.

**Short Method:** All right triangles contain one right angle.

**Q15: Statement: All mammals give birth to live offspring.**

**Conclusion: Long Method:** The conclusion logically follows from the statement, as it generalizes the reproductive mode of all members of the category "mammals" to live birth. This conclusion is supported by biological taxonomy and reproductive anatomy, which classify mammals based on the presence of mammary glands and the capacity for viviparous reproduction. Additionally, it aligns with empirical observations of mammalian reproduction across diverse species, from monotremes to eutherians. Therefore, the conclusion accurately reflects the viviparous reproductive strategy characteristic of mammals.

**Short Method:** All mammals are viviparous.

**Q16: Statement: All prime numbers are integers.**

**Conclusion: Long Method:** The conclusion logically follows from the statement, as it generalizes that all prime numbers belong to the category of integers. This conclusion is supported by mathematical definitions, as prime numbers are defined as integers greater than 1 that have no positive divisors other than 1 and themselves. Since integers encompass both prime and composite numbers, any prime number necessarily falls within the broader category of integers. Therefore, the conclusion accurately reflects the relationship between prime numbers and integers.

**Short Method:** All prime numbers are integers.

**Q17: Statement: All equilateral triangles have congruent angles.**

**Conclusion: Long Method:** The conclusion logically follows from the statement, as it asserts that congruent angles are a defining property of all members of the category "equilateral triangles." This conclusion is grounded in geometric definitions, as equilateral triangles are geometric figures characterized by three equal side lengths and three congruent angles. Therefore, any triangle meeting this criterion qualifies as an equilateral triangle and exhibits congruent angles. Thus, the conclusion accurately reflects the geometric properties of equilateral triangles.

**Short Method:** All equilateral triangles have congruent angles.

**Q18: Statement: All parallel lines never intersect.**

**Conclusion: Long Method:** The conclusion logically follows from the statement, as it generalizes the non-intersecting behavior of all members of the category "parallel lines." This conclusion is grounded in Euclidean geometry and the definition of parallel lines, which are lines that maintain a constant distance apart and do not converge or intersect. Therefore, any pair of lines meeting this criterion qualifies as parallel lines and exhibits the property of non-intersection. Thus, the conclusion accurately reflects the geometric relationship between parallel lines.

**Short Method:** All parallel lines are non-intersecting.

**Q19: Statement: All right-handed individuals have a dominant right hand.**

**Conclusion: Long Method:** The conclusion logically follows from the statement, as it generalizes the presence of a dominant right hand among all members of the category "right-handed individuals." This conclusion is supported by empirical observations and neurological research, which identify handedness as a manifestation of lateralized brain function, with the majority of right-handed individuals exhibiting dominance in their right hand for manual tasks. Additionally, it aligns with cultural norms and language usage that associate right-handedness with the dominant hand. Therefore, the conclusion accurately reflects the prevalence of right-hand dominance among right-handed individuals.

**Short Method:** All right-handed people are right-hand dominant.

**Q20: Statement: All squares are quadrilaterals.**

**Conclusion: Long Method:** The conclusion logically follows from the statement, as it asserts that all squares fall within the broader category of quadrilaterals. This conclusion is grounded in geometric definitions, as squares are geometric figures characterized by four equal side lengths and four right angles, meeting the criteria for quadrilaterals. Therefore, any shape meeting the specifications of a square qualifies as a quadrilateral. Thus, the conclusion accurately reflects the geometric relationship between squares and quadrilaterals.

**Short Method:** All squares are quadrilaterals.

**Q21: Statement: All rational numbers can be expressed as fractions.**

**Conclusion: Long Method:** The conclusion logically follows from the statement, as it generalizes the expressibility of all members of the category "rational numbers" in fractional form. This conclusion is grounded in mathematical definitions, as rational numbers are defined as numbers that can be expressed as the quotient or ratio of two integers (where the denominator is not zero). Therefore, any number meeting this criterion qualifies as a rational number and can be represented as a fraction. Thus, the conclusion accurately reflects the nature of rational numbers.

**Short Method:** All rational numbers are fractions.

**Q22: Statement: All regular polygons have congruent sides.**

**Conclusion: Long Method:** The conclusion logically follows from the statement, as it asserts that congruent sides are a defining property of all members of the category "regular polygons." This conclusion is grounded in geometric definitions, as regular polygons are polygons characterized by equal side lengths and equal interior angles. Therefore, any polygon meeting this criterion qualifies as a regular polygon and exhibits congruent sides. Thus, the conclusion accurately reflects the geometric properties of regular polygons.

**Short Method:** All regular polygons have congruent sides.

**Q23: Statement: All multiples of 6 are even numbers.**

**Conclusion: Long Method:** The conclusion logically follows from the statement, as it generalizes the even parity of all members of the category "multiples of 6." This conclusion is supported by mathematical principles, as even numbers are defined as integers divisible by 2 without leaving a remainder. Since multiples of 6 are obtained by multiplying 6 by integer factors, they inherently possess factors of 2, making them even. Therefore, any integer multiple of 6 qualifies as an even number. Thus, the conclusion accurately reflects the parity relationship between multiples of 6 and even numbers.

**Short Method:** All multiples of 6 are even.

**Q24: Statement: All squares have four right angles.**

**Conclusion: Long Method:** The conclusion logically follows from the statement, as it asserts that the presence of four right angles is a defining property of all members of the category "squares." This conclusion is grounded in geometric definitions, as squares are geometric figures characterized by four equal side lengths and four right angles. Therefore, any shape meeting this criterion qualifies as a square and exhibits four right angles. Thus, the conclusion accurately reflects the geometric properties of squares.

**Short Method:** All squares contain four right angles.

**Q25: Statement: All mammals have hair or fur.**

**Conclusion: Long Method:** The conclusion logically follows from the statement, as it generalizes the presence of hair or fur as a characteristic feature of all members of the category "mammals." This conclusion is supported by biological taxonomy and anatomical observations, which identify hair as a defining characteristic of mammals, serving various functions such as insulation, protection, and sensory perception. Additionally, it aligns with empirical evidence of hair/fur presence across diverse mammalian species, from terrestrial to aquatic habitats. Therefore, the conclusion accurately reflects the ubiquitous nature of hair or fur among mammals.

**Short Method:** All mammals possess hair/fur.

**Q26: Statement: All prime numbers are greater than 1.**

**Conclusion: Long Method:** The conclusion logically follows from the statement, as it generalizes that all members of the category "prime numbers" have values exceeding 1. This conclusion is supported by the mathematical definition of prime numbers, which are integers greater than 1 that have no positive divisors other than 1 and themselves. Since the concept of prime numbers excludes 1 (which is neither prime nor composite) and any number less than 1, all prime numbers inherently possess values greater than 1. Therefore, the conclusion accurately reflects the numerical characteristics of prime numbers.

**Short Method:** All prime numbers are > 1.

**Q27: Statement: All equilateral triangles are also isosceles triangles.**

**Conclusion: Long Method:** The conclusion logically follows from the statement, as it asserts that all equilateral triangles belong to the category of "isosceles triangles." This conclusion is grounded in geometric definitions, as equilateral triangles are triangles with three congruent sides, meeting the criteria for isosceles triangles (which have at least two congruent sides). Therefore, any triangle meeting the specifications of an equilateral triangle automatically qualifies as an isosceles triangle. Thus, the conclusion accurately reflects the geometric relationship between equilateral and isosceles triangles.

**Short Method:** All equilateral triangles are isosceles.

**Q28: Statement: All right angles are congruent.**

**Conclusion: Long Method:** The conclusion logically follows from the statement, as it generalizes the equality of all members of the category "right angles." This conclusion is grounded in geometric definitions, as right angles are defined as angles that measure exactly 90 degrees. Therefore, any angle meeting this criterion qualifies as a right angle and exhibits congruence with all other right angles. Thus, the conclusion accurately reflects the geometric property of right angles.

**Short Method:** All right angles are congruent.

**Q29: Statement: All perfect squares are non-negative integers.**

**Conclusion: Long Method:** The conclusion logically follows from the statement, as it generalizes the non-negativity and integer nature of all members of the category "perfect squares." This conclusion is

supported by mathematical definitions, as perfect squares are numbers that result from squaring an integer, producing non-negative results. Additionally, it aligns with the fundamental properties of square numbers, which include their non-negative values and integral roots. Therefore, the conclusion accurately reflects the numerical characteristics of perfect squares.

**Short Method:** All perfect squares are non-negative integers.

**Q30: Statement: All multiples of 10 end in 0.**

**Conclusion: Long Method:** The conclusion logically follows from the statement, as it generalizes the unit digit pattern exhibited by all members of the category "multiples of 10." This conclusion is grounded in the base-10 positional numeral system, where the rightmost digit represents the units place. Since multiples of 10 are obtained by multiplying 10 by integer factors, they consistently terminate in 0 in the units place. Therefore, any integer multiple of 10 qualifies as a number ending in 0. Thus, the conclusion accurately reflects the numerical characteristic of multiples of 10.

**Short Method:** All multiples of 10 end in 0.

**Q31: Statement: All right triangles have one right angle.**

**Conclusion: Long Method:** The conclusion logically follows from the statement, as it asserts that the presence of one right angle is a defining property of all members of the category "right triangles." This conclusion is grounded in geometric definitions, as right triangles are geometric figures characterized by the inclusion of a 90-degree angle (right angle) formed between two sides. Therefore, any triangle meeting this criterion qualifies as a right triangle. Thus, the conclusion accurately reflects the geometric properties of right triangles.

**Short Method:** All right triangles contain one right angle.

**Q32: Statement: All even numbers are divisible by 2.**

**Conclusion: Long Method:** The conclusion logically follows from the statement, as it generalizes the divisibility criterion exhibited by all members of the category "even numbers." This conclusion is supported by the definition of even numbers, which are integers that can be divided by 2 without leaving a remainder. Since the concept of evenness implies divisibility by 2, all even numbers inherently fulfill this criterion. Therefore, any integer satisfying the divisibility property qualifies as an even number. Thus, the conclusion accurately reflects the numerical characteristic of even numbers.

**Short Method:** All even numbers are divisible by 2.

**Q33: Statement: All multiples of 5 end in either 0 or 5.**

**Conclusion: Long Method:** The conclusion logically follows from the statement, as it generalizes the unit digit pattern exhibited by all members of the category "multiples of 5." This conclusion is grounded in the base-10 positional numeral system, where multiples of 5 consistently terminate in either 0 or 5 in

the units place. Therefore, any integer multiple of 5 qualifies as a number ending in either 0 or 5. Thus, the conclusion accurately reflects the numerical characteristic of multiples of 5.

**Short Method:** All multiples of 5 end in 0 or 5.

**Q34: Statement: All squares are rectangles.**

**Conclusion: Long Method:** The conclusion logically follows from the statement, as it asserts that all squares fall within the broader category of rectangles. This conclusion is grounded in geometric definitions, as squares meet the criteria for rectangles (quadrilaterals with four right angles) while exhibiting additional properties such as congruent sides. Therefore, squares can be considered a special case of rectangles with specific attributes. Thus, the conclusion accurately reflects the geometric relationship between squares and rectangles.

**Short Method:** All squares are rectangles.

**Q35: Statement: All natural numbers are whole numbers.**

**Conclusion: Long Method:** The conclusion logically follows from the statement, as it generalizes the inclusion of all members of the category "natural numbers" within the category of "whole numbers." This conclusion is supported by mathematical definitions, where natural numbers are non-negative integers used for counting and whole numbers encompass natural numbers along with zero. Therefore, any integer considered a natural number also qualifies as a whole number. Thus, the conclusion accurately reflects the numerical relationship between natural numbers and whole numbers.

**Short Method:** All natural numbers are whole numbers.

**Q36: Statement: All squares have four equal sides.**

**Conclusion: Long Method:** The conclusion logically follows from the statement, as it asserts that the presence of four equal sides is a defining property of all members of the category "squares." This conclusion is grounded in geometric definitions, as squares are geometric figures characterized by four sides of equal length and four right angles. Therefore, any shape meeting this criterion qualifies as a square and exhibits four equal sides. Thus, the conclusion accurately reflects the geometric properties of squares.

**Short Method:** All squares have equal sides.

**Q37: Statement: All rational numbers can be represented as terminating or repeating decimals.**

**Conclusion: Long Method:** The conclusion logically follows from the statement, as it generalizes the decimal representation property of all members of the category "rational numbers." This conclusion is supported by the definition of rational numbers, which are numbers that can be expressed as the quotient of two integers. Since the division of two integers results in either a terminating or repeating decimal, all rational numbers exhibit this decimal representation property. Therefore, any number meeting this

criterion qualifies as a rational number. Thus, the conclusion accurately reflects the decimal characteristics of rational numbers.

**Short Method:** All rational numbers are terminating or repeating decimals.

**Q38: Statement: All mammals give birth to live offspring.**

**Conclusion: Long Method:** The conclusion logically follows from the statement, as it generalizes the reproductive mode of all members of the category "mammals" to live birth. This conclusion is supported by biological taxonomy and reproductive anatomy, which classify mammals based on the presence of mammary glands and the capacity for viviparous reproduction. Additionally, it aligns with empirical observations of mammalian reproduction across diverse species, from monotremes to eutherians. Therefore, the conclusion accurately reflects the viviparous reproductive strategy characteristic of mammals.

**Short Method:** All mammals are viviparous.

**Q39: Statement: All right triangles have one right angle.**

**Conclusion: Long Method:** The conclusion logically follows from the statement, as it asserts that the presence of one right angle is a defining property of all members of the category "right triangles." This conclusion is grounded in geometric definitions, as right triangles are geometric figures characterized by the inclusion of a 90-degree angle (right angle) formed between two sides. Therefore, any triangle meeting this criterion qualifies as a right triangle. Thus, the conclusion accurately reflects the geometric properties of right triangles.

**Short Method:** All right triangles contain one right angle.

**Q40: Statement: All perfect squares are non-negative integers.**

**Conclusion: Long Method:** The conclusion logically follows from the statement, as it generalizes the non-negativity and integer nature of all members of the category "perfect squares." This conclusion is supported by mathematical definitions, as perfect squares are numbers that result from squaring an integer, producing non-negative results. Additionally, it aligns with the fundamental properties of square numbers, which include their non-negative values and integral roots. Therefore, the conclusion accurately reflects the numerical characteristics of perfect squares.

**Short Method:** All perfect squares are non-negative integers.