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Logical Reasoning Tricks and Techniques for

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LOGIC REASONING- QUESTION STATEMENT (English)

Q1: In a class of 40 students, John is ranked 15th from the top. What is his rank from the bottom?

Long Method: To find John's rank from the bottom, we need to consider the total number of students and subtract John's rank from the top. The total number of students is 40. If John is ranked 15th from the top, it means there are 14 students above him. To find out how many students are below him, we subtract his position from the total number of students and then add 1 (since John's rank from the top is included in the total number). So, $40 - 15 + 1 = 26$. Therefore, John's rank from the bottom is 26th.

Short Method: Subtract John's rank from the total number of students and add 1: $40 - 15 + 1 = 26$. Hence, John's rank from the bottom is 26th.

Q2: Statement: The sun rises in the east. What can be concluded from this statement?

Long Method: The statement "The sun rises in the east" is a universally accepted fact based on the rotation of the Earth. It implies that every morning, when the sun becomes visible above the horizon, it appears in the eastern part of the sky. This phenomenon is due to the Earth's rotation from west to east. Hence, from this statement, we can conclude that the direction of the sunrise is always towards the east. This conclusion holds true irrespective of the observer's location on Earth, provided they have a clear view of the horizon.

Short Method: The sun's appearance in the eastern sky every morning confirms the direction of the sunrise as east.

Q3: Statement: All birds have wings. Can we conclude that all winged creatures are birds?

Long Method: The statement "All birds have wings" is true, as wings are a characteristic feature of birds, allowing them for flight or other functions. However, concluding that all winged creatures are birds would be incorrect. There are various other winged creatures such as insects (like butterflies, bees), bats, and some reptiles (like pterosaurs). Therefore, while all birds have wings, not all winged creatures belong to the category of birds. This logical fallacy is known as affirming the consequent, where the reverse of a conditional statement is incorrectly assumed to be true.

Short Method: No, not all winged creatures are birds; other animals like insects and bats also have wings.

Q4: Statement: Water boils at 100°C at sea level. What assumption can be made about boiling water at higher altitudes?

Long Method: The statement "Water boils at 100°C at sea level" is based on standard atmospheric pressure, which is approximately 1 atm. At higher altitudes, atmospheric pressure decreases because there is less air above the surface exerting pressure. As a result, the boiling point of water decreases with

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altitude because it takes less heat for the vapor pressure of the water to equal the surrounding pressure. Hence, we can assume that at higher altitudes, water will boil at a temperature lower than 100°C. This phenomenon is explained by the principles of thermodynamics and fluid mechanics.

Short Method: Water boils at a lower temperature at higher altitudes due to decreased atmospheric pressure.

Q5: Statement: All managers in the company are required to have an MBA degree. Does this mean that all MBA degree holders in the company are managers?

Long Method: The statement specifies a requirement for managers but does not provide any information about other positions within the company. It only states that being a manager requires having an MBA degree, but it does not imply that having an MBA degree is sufficient to become a manager. There could be MBA degree holders working in non-managerial positions, such as analysts, consultants, or other roles. Therefore, while all managers must have an MBA, not all employees with an MBA are necessarily managers. This distinction is important in understanding job qualifications versus job roles.

Short Method: No, not all MBA holders in the company are managers; the degree is a requirement for managers but not exclusive to them.

Q6: Statement: All engineers in the tech firm have a background in computer science. Can we conclude that all employees with a background in computer science are engineers?

Long Method: The statement specifies that all engineers in the tech firm possess a background in computer science, indicating a specific qualification for the engineering positions. However, it does not provide information about other roles within the firm that might also require or prefer a computer science background. It is possible that other positions such as IT support, software testing, or project management also have employees with a computer science background. Therefore, while it is true that all engineers have a computer science background, it does not mean that all individuals with a computer science background are engineers within the firm.

Short Method: No, not all employees with a computer science background are engineers; other roles may also have this background.

Q7: Statement: Only PhD holders can apply for the research scientist position. Does this imply that all PhD holders are eligible for the research scientist position?

Long Method: The statement indicates a necessary condition for applying to the research scientist position, which is having a PhD. However, it does not imply that simply having a PhD makes one eligible for the position. There may be additional criteria such as relevant research experience, specific

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field expertise, or other qualifications required for the position. Thus, while having a PhD is a necessary condition, it is not a sufficient condition by itself to conclude eligibility for the research scientist role.

Short Method: No, having a PhD is necessary but not sufficient; other qualifications may also be required.

Q8: Statement: Every student who scores above 90% in the final exam will receive a scholarship. Can we conclude that students who do not receive a scholarship scored below 90%?

Long Method: The statement specifies that scoring above 90% in the final exam is a condition for receiving a scholarship. Therefore, if a student does not receive a scholarship, it logically follows that they did not meet the specified condition of scoring above 90%. This conclusion directly follows from the given information as it provides a clear criterion for the scholarship. Hence, we can conclude that students who do not receive a scholarship scored below 90% in the final exam.

Short Method: Yes, students without a scholarship scored below 90%, as scholarships are given only to those scoring above 90%.

Q9: Statement: All computer programmers are introverts. What assumption can be made about the personality traits of individuals who are not introverts?

Long Method: The statement categorizes all computer programmers as introverts, implying that introversion is a common trait among individuals in this profession. To infer something about individuals who are not introverts, we look at the logical contrapositive of the statement. If all computer programmers are introverts, then anyone who is not an introvert cannot be a computer programmer. This assumption is based on the exclusivity implied by the original statement. However, this assumption may be too rigid as it overlooks the diversity of personality traits within any profession.

Short Method: If not an introvert, then not a computer programmer, according to the statement.

Q10: Statement: Regular exercise leads to better mental health. What can be concluded about individuals who do not exercise regularly?

Long Method: The statement indicates a positive correlation between regular exercise and better mental health. To draw a conclusion about individuals who do not exercise regularly, we must consider the inverse of the original statement. While it suggests that regular exercise benefits mental health, it does not provide direct information about the mental health of those who do not exercise regularly. The absence of regular exercise does not necessarily lead to poor mental health, as other factors might contribute to mental well-being. Hence, we cannot conclusively determine the mental health status of individuals who do not exercise regularly based solely on this statement.

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Short Method: Cannot conclude mental health status of non-exercisers; statement only affirms benefits for regular exercisers.

Q11: Statement: All successful entrepreneurs are risk-takers. Can we conclude that all risk-takers are successful entrepreneurs?

Long Method: The statement indicates that being a risk-taker is a characteristic of successful entrepreneurs. However, it does not imply that all risk-takers become successful entrepreneurs. Risk-taking is one of many traits that might contribute to entrepreneurial success, but other factors such as market conditions, innovation, management skills, and perseverance also play critical roles. Therefore, it is incorrect to conclude that all individuals who take risks will necessarily become successful entrepreneurs. This logical fallacy is known as the converse error.

Short Method: No, not all risk-takers are successful entrepreneurs; success depends on multiple factors.

Q12: Statement: Drinking plenty of water improves skin health. What can be concluded about people who do not drink plenty of water?

Long Method: The statement establishes a positive relationship between drinking plenty of water and improved skin health. To conclude about individuals who do not drink plenty of water, we need to consider the absence of the condition mentioned. While it suggests that drinking water has benefits for the skin, it does not necessarily imply that those who do not drink plenty of water will have poor skin health. Other factors such as diet, genetics, and skincare routines can also influence skin health. Hence, we cannot definitively conclude the skin health status of individuals who do not drink plenty of water based solely on this statement.

Short Method: Cannot conclude skin health of non-water drinkers; other factors also play a role.

Q13: Statement: Only graduates can apply for this job. Can we conclude that all applicants for this job are graduates?

Long Method: The statement clearly defines a necessary condition for applying to the job, which is that applicants must be graduates. This implies that anyone who applies for this job must meet the criterion of being a graduate. Therefore, we can confidently conclude that all individuals who apply for this job are indeed graduates. This conclusion follows directly from the necessary condition set forth in the statement.

Short Method: Yes, all applicants must be graduates, as per the job requirement.

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Q14: Statement: Every time it rains, the ground gets wet. What can we conclude if the ground is not wet?

Long Method: The statement indicates a consistent cause-and-effect relationship between rain and the ground getting wet. If we observe that the ground is not wet, we can logically conclude that it has not rained. This conclusion is based on the contrapositive of the given conditional statement: if rain occurs, the ground gets wet; hence, if the ground is not wet, it must mean that rain did not occur.

Short Method: If the ground is not wet, it has not rained.

Q15: Statement: All professors at the university hold a PhD degree. Can we conclude that all PhD degree holders are professors at the university?

Long Method: The statement specifies a qualification requirement for professors at the university, indicating that holding a PhD is a necessity for their positions. However, this does not imply that all individuals with a PhD degree are professors at this university. There are many other career paths for PhD holders, such as research scientists, industry experts, consultants, and educators at other institutions. Therefore, while it is true that all professors at the university must hold a PhD, not all PhD holders are professors at this university.

Short Method: No, not all PhD holders are professors at the university; they may have other roles.

Q16: Statement: A good diet and regular exercise are essential for maintaining good health. What can be concluded about individuals who have good health?

Long Method: The statement indicates that both a good diet and regular exercise are crucial components for maintaining good health. To draw a conclusion about individuals who are in good health, we can infer that they are likely following these guidelines, as good health is often a result of a balanced diet and regular physical activity. However, it is also possible that genetic factors, mental health, and other lifestyle choices contribute to their well-being. Thus, while we can reasonably conclude that individuals with good health are likely to have good dietary and exercise habits, we should also consider other contributing factors.

Short Method: Likely follow good diet and exercise habits, but other factors may also contribute.

Q17: Statement: All members of the chess club are also members of the math club. Can we conclude that all members of the math club are also members of the chess club?

Long Method: The statement establishes that membership in the chess club is a subset of the math club, meaning every chess club member is also part of the math club. However, this does not imply that the reverse is true, i.e., it does not mean that all members of the math club are members of the chess club.

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There could be math club members who are not interested in chess or who do not belong to the chess club. Therefore, we cannot conclude that all math club members are also chess club members.

Short Method: No, not all math club members are in the chess club; only chess club members are also in the math club.

Q18: Statement: All academic achievers have high IQs. What assumption can be made about individuals with average IQs?

Long Method: The statement suggests a correlation between high academic achievement and high IQs. To make an assumption about individuals with average IQs, we must consider the nature of academic performance. It implies that individuals with average IQs may not be among the top academic achievers. However, this does not mean that individuals with average IQs cannot achieve academically; they may still perform well through hard work, effective study habits, and other factors. Thus, the assumption would be that individuals with average IQs are less likely to be top academic achievers but can still achieve academic success.

Short Method: Less likely to be top achievers, but can still succeed academically.

Q19: Statement: Consuming a balanced diet ensures adequate nutrient intake. What can be concluded about individuals who do not consume a balanced diet?

Long Method: The statement asserts that a balanced diet is necessary for adequate nutrient intake. To draw a conclusion about individuals who do not consume a balanced diet, we must consider the implications of an imbalanced diet. It suggests that individuals who do not consume a balanced diet may not receive the necessary nutrients their bodies require. This can lead to deficiencies and related health issues. Therefore, we can conclude that those who do not follow a balanced diet are at risk of inadequate nutrient intake and potential health problems.

Short Method: At risk of inadequate nutrient intake and health issues.

Q20: Statement: All employees must complete the training program before starting their job. Can we conclude that anyone who has not completed the training program is not yet starting their job?

Long Method: The statement sets a mandatory prerequisite for employment, indicating that completing the training program is necessary before starting the job. From this, we can conclude that anyone who has not completed the training program has not yet met the required condition to begin their job. This conclusion directly follows from the stipulated requirement, affirming that without completion of the training program, one cannot start the job.

Short Method: Yes, those who haven't completed training haven't started their job.

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Q21: Statement: Every time the bell rings, students go to their classrooms. What can be concluded if students are not in their classrooms?

Long Method: The statement indicates a cause-and-effect relationship where the ringing of the bell prompts students to go to their classrooms. If students are not in their classrooms, we can conclude that the bell has not rung, assuming that this is the only factor influencing their movement to classrooms. However, other factors like breaks, special activities, or early dismissals could also explain their absence. Therefore, while the statement suggests that the bell ringing is a primary factor, it is not the sole factor affecting students' presence in classrooms.

Short Method: Bell has not rung, or other factors are influencing student location.

Q22: Statement: No one without a ticket is allowed to enter the theater. Can we conclude that everyone inside the theater has a ticket?

Long Method: The statement sets a condition for entry, specifying that having a ticket is mandatory for entering the theater. From this, we can logically conclude that everyone inside the theater must have met this condition by possessing a ticket. The conclusion directly follows from the stated requirement, ensuring that all individuals inside the theater have tickets.

Short Method: Yes, everyone inside has a ticket.

Q23: Statement: Some students who are good at mathematics are also good at science. Can we conclude that all students who are good at mathematics are also good at science?

Long Method: The statement indicates that there is an overlap between students who excel in mathematics and those who excel in science, but it only applies to some students. It does not specify that all students who are good at mathematics are also good at science. There could be students who are good at mathematics but not science, and vice versa. Therefore, we cannot conclude that all students who excel in mathematics will also excel in science.

Short Method: No, not all math students are good at science; only some are.

Q24: Statement: Most successful athletes train rigorously every day. What assumption can be made about athletes who do not train rigorously every day?

Long Method: The statement implies that rigorous daily training is a significant factor contributing to the success of athletes. To make an assumption about athletes who do not train rigorously every day, we can infer that they may not achieve the same level of success as those who do train rigorously. However, this is not an absolute conclusion, as success in athletics can also depend on other factors such as talent, strategy, coaching, and mental toughness. Therefore, while the assumption is that athletes who do not

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train rigorously every day might be less likely to be as successful, it is important to consider other contributing factors as well.

Short Method: Less likely to be as successful, but other factors also play a role.

Q25: Statement: All members of the committee are required to attend the annual meeting. Can we conclude that if someone did not attend the annual meeting, they are not a member of the committee?

Long Method: The statement indicates a requirement for all committee members to attend the annual meeting. If someone did not attend the annual meeting, it can be concluded that they are not fulfilling the obligations of a committee member. However, there may be exceptions such as legitimate reasons for absence (illness, emergency). Despite this, the general conclusion from the given information would be that if someone did not attend the meeting, they are likely not a member of the committee, assuming no valid exceptions are in place.

Short Method: Likely not a member if they did not attend, barring exceptions.

Q26: Statement: Eating a lot of fruits and vegetables contributes to a healthy diet. Can we conclude that people who do not eat a lot of fruits and vegetables do not have a healthy diet?

Long Method: The statement suggests that consuming plenty of fruits and vegetables is a component of a healthy diet. However, to conclude that people who do not eat a lot of fruits and vegetables do not have a healthy diet would be an overgeneralization. A healthy diet can include other nutritious foods such as lean proteins, whole grains, and healthy fats. While not eating fruits and vegetables might suggest a lack of these nutrients, it does not definitively mean the overall diet is unhealthy. Other healthy dietary practices could compensate for the lack of fruits and vegetables.

Short Method: Not necessarily; other healthy foods can compensate.

Q27: Statement: All engineers at the company must have a degree in engineering. What can be concluded about someone working as an engineer at the company without a degree in engineering?

Long Method: The statement clearly sets a prerequisite for being an engineer at the company, which is holding a degree in engineering. If someone is working as an engineer at the company without this degree, it would imply a violation of the company's stated requirements. Therefore, we can conclude that it is highly unlikely for someone to work as an engineer at the company without an engineering degree, unless there has been an oversight or exception to the rule.

Short Method: Unlikely to be an engineer without the degree.

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Q28: Statement: A country's economic growth is tied to its technological advancements. What assumption can be made about countries with little to no technological advancements?

Long Method: The statement indicates a direct relationship between technological advancements and economic growth. To make an assumption about countries with little to no technological advancements, we can infer that these countries may experience slower or stagnated economic growth. Technological advancements drive productivity, efficiency, and innovation, which are crucial for economic development. Therefore, it is reasonable to assume that without technological advancements, a country's economic growth would be hindered.

Short Method: Slower or stagnated economic growth likely.

Q29: Statement: All members of the book club must read the assigned book before the meeting. Can we conclude that someone who hasn't read the book is not a member of the book club?

Long Method: The statement establishes that reading the assigned book is a mandatory activity for book club members. If someone has not read the assigned book, it suggests that they are not adhering to the book club's rules. However, it is possible that a member may have been unable to read the book due to unforeseen circumstances. Despite this possibility, the general conclusion from the statement would be that someone who hasn't read the book is likely not an active member of the book club, assuming no exceptions are considered.

Short Method: Likely not an active member, barring exceptions.

Q30: Statement: Regular exercise is necessary to maintain physical fitness. What can be concluded about individuals who do not exercise regularly?

Long Method: The statement asserts that regular exercise is a necessary condition for maintaining physical fitness. Therefore, we can conclude that individuals who do not exercise regularly may not be maintaining optimal physical fitness. Regular exercise contributes to cardiovascular health, muscle strength, flexibility, and overall well-being. Without regular exercise, individuals are likely to experience a decline in these aspects of physical fitness, although other factors such as diet and genetics also play roles in overall health.

Short Method: Likely not maintaining optimal physical fitness.

Q31: Statement: Only registered voters can participate in the election. Can we conclude that all participants in the election are registered voters?

Long Method: The statement specifies that being a registered voter is a prerequisite for participating in the election. From this, we can logically conclude that all individuals who participate in the election

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must be registered voters. This conclusion follows directly from the given requirement, affirming that participation is limited to those who meet the criterion of being registered voters.

Short Method: Yes, all participants are registered voters.

Q32: Statement: All employees who work overtime will receive additional pay. Can we conclude that employees who do not receive additional pay did not work overtime?

Long Method: The statement establishes a clear relationship between working overtime and receiving additional pay. If an employee did not receive additional pay, it logically follows that they did not work overtime, as additional pay is contingent on working overtime. This conclusion directly follows from the conditional relationship stated, assuming there are no errors in payroll or exceptions to the rule.

Short Method: Yes, they did not work overtime.

Q33: Statement: Every citizen has a right to free speech. What can we conclude about a place where free speech is not allowed?

Long Method: The statement highlights a fundamental right for every citizen. If free speech is not allowed in a particular place, it suggests a violation of this fundamental right. We can conclude that such a place may have restrictions or policies that infringe upon the right to free speech, which could indicate a lack of certain freedoms or democratic principles. This conclusion points to broader implications about the governance and legal framework of that place.

Short Method: Infringement on the right to free speech.

Q34: Statement: All renewable energy sources are environmentally friendly. What assumption can be made about non-renewable energy sources?

Long Method: The statement asserts that all renewable energy sources are environmentally friendly. To make an assumption about non-renewable energy sources, we can infer that they may not be environmentally friendly. Non-renewable energy sources, such as fossil fuels, are often associated with environmental pollution, greenhouse gas emissions, and depletion of natural resources. Therefore, the assumption would be that non-renewable energy sources are likely to have negative environmental impacts.

Short Method: Likely not environmentally friendly.

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