Name: _____   Date: _____

Answer Key: Reason or Rhetoric? 10th Grade Logic & Fallacy Challenge

Sophomores dismantle sophisticated rhetorical traps and evaluate the formal validity of complex philosophical arguments through rigorous situational analysis.

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1. A defense attorney argues: 'The prosecution claims my client was at the scene because of GPS data, but they fail to acknowledge that the GPS industry is plagued by privacy scandals and corporate greed.' Which informal fallacy is being deployed?

Answer: B) Red herring

> The attorney introduces an irrelevant topic (privacy scandals in the GPS industry) to divert attention from the actual evidence (the specific GPS data in the case).

2. In formal logic, if we have the premises 'If P, then Q' and 'Not Q', we can validly conclude 'Not P' using the rule of inference known as _____.

Answer: C) Modus Tollens

> Modus Tollens is the 'mode that denies'; it dictates that if a consequent is false, the antecedent that necessitated it must also be false.

3. An argument can be logically valid even if all of its premises are factually false.

Answer: A) True

> Validity refers only to the structural relationship between premises and conclusion; if the conclusion follows necessarily from the premises (regardless of their truth), the argument is valid.

4. Analyze this syllogism: 'No philosophers are billionaires. Some researchers are philosophers. Therefore, some researchers are not billionaires.' This argument is:

Answer: C) Valid via categorical syllogism rules

> This is a valid EIO-1 or EIO-3 type syllogism (Ferio or Felapton); the conclusion logically and necessarily follows from the overlapping categories.

5. A politician states, 'We must increase the military budget, or we will be invaded by next year.' This statement creates a _____ by ignoring middle-ground options like diplomacy or maintaining current spending.

Answer: B) False Dichotomy

A false dichotomy (or false dilemma) limits the options to two extreme choices when other viable alternatives exist.

6. A 'sound' argument is one that is both logically valid and possesses premises that are actually true in reality.

Answer: A) True

Soundness is the highest standard of a deductive argument; it requires both perfect logical structure and factual accuracy.

7. Identify the logical flaw: 'The new urban planning initiative must be a failure because the lead architect was once fired from a firm for personal conduct issues.'

Answer: D) Ad Hominem Abusive

This is an Ad Hominem Abusive attack; it dismisses the merit of the planning initiative by attacking the character of the creator rather than the plan itself.

8. If an argument relies on the assumption that because a group's components have a certain property, the entire group must also have that property, it commits the fallacy of _____.

Answer: B) Composition

The fallacy of composition wrongly assumes that what is true for the parts (e.g., individual stars are small) is true for the whole (e.g., the galaxy is small).

9. Which of the following represents an Inductive Strong argument?

Answer: B) Most historical artifacts from the Ming Dynasty were well-preserved; therefore, this unexamined Ming vase is likely well-preserved.

Option B uses probabilistic reasoning based on a majority pattern, which characterizes a strong inductive argument, whereas A is deductive and C/D are fallacious.

10. The 'Slippery Slope' fallacy is only committed if the suggested chain of events is presented without sufficient evidence for the causal links.

Answer: A) True

If a chain of causality is proven and evidence-based, it is a legitimate warning. It only becomes a fallacy when the cascade of negative effects is assumed without proof.