NEWFOUNDLAND AND LABRADOR MATHEMATICS 2201 · UNIT A · 25 QUESTIONS

Logical Reasoning — Practice Test

This practice test was made by AI and there may be mistakes. If a question or answer looks wrong, use the Flag a mistake button to let Brett know so he can fix it.

1 **Recall the definition. The converse of the statement if p then q is**



A if q then p

B if not p then not q

C if not q then not p

D p and q

Understand It with Pulse | Flag a mistake

2 **Think about the definition. The contrapositive of the statement if p then q is**

A if q then p

B if not q then not p

C if not p then not q

D p or q

Understand It with Pulse | Flag a mistake

3 **Use the standard definition. A statement that is always false is called**



A a tautology

B a converse

C a contradiction

D an inductive argument

Understand It with Pulse | Flag a mistake

4 **Apply the definition carefully. The statement p and q is true only when**

A p is true

B q is true

C at least one is true

D both p and q are true

Understand It with Pulse | Flag a mistake

5 **Consider the meaning of the term. The statement p or q is false only when**

A both p and q are false

B p is false

C q is false

D at least one is false

Understand It with Pulse | Flag a mistake

6

A truth table for 4 variables has how many rows?

ANSWER

Understand It with Pulse

Flag a mistake

7 **Check the definition first. Deductive reasoning moves from**



A specific cases to a general claim

B a guess to a proof

C general principles to a specific conclusion

D an example to a counterexample

Understand It with Pulse | Flag a mistake

8 **Start from the definition. Inductive reasoning moves from**

A general principles to a specific conclusion

B a theorem to an axiom

C a conclusion to a premise

D specific cases to a general claim

Understand It with Pulse | Flag a mistake

9 **Remember how the term is defined. In set notation, A union B contains elements in**



A A or B or both

B A and B only

C A only

D neither A nor B

Understand It with Pulse | Flag a mistake

10 **Set A has 30 elements, set B has 25 elements, and their intersection has 10 elements. The union has how many elements?**

ANSWER

Understand It with Pulse | Flag a mistake

11 **Think about the rule. One counterexample is enough to disprove**



A a single example

B a definition

C a universal statement

D a conditional with a true premise

Understand It with Pulse | Flag a mistake

12 **Recall the rule. The negation of all students passed is**



A no student passed

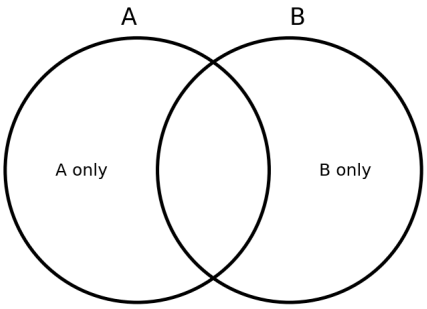
B all students failed

C some students passed

D at least one student did not pass

Understand It with Pulse | Flag a mistake

13 **In the Venn diagram, the overlapping region represents elements in**



- **A** both A and B
- **B** A only
- **C** B only
- **D** neither A nor B

Understand It with Pulse | Flag a mistake

14 **A group has 60 people. If 25 are in set A, how many are not in set A?**

ANSWER _____

Understand It with Pulse | Flag a mistake

15 **Review the rule. The converse of the statement if p then q is**

A if not p then not q

B if not q then not p

C if q then p

D p and q

Understand It with Pulse | Flag a mistake

16 **Think about the concept. The contrapositive of the statement if p then q is**

A if q then p

B if not p then not q

C p or q

D if not q then not p

Understand It with Pulse | Flag a mistake

17 **Recall the concept. A statement that is always false is called**

A a contradiction

B a tautology

C a converse

D an inductive argument

Understand It with Pulse | Flag a mistake

18 **Apply the concept. The statement p and q is true only when**

A p is true

B both p and q are true

C q is true

D at least one is true

Understand It with Pulse | Flag a mistake

19 **Consider the concept in general. The statement p or q is false only when**

A p is false

B q is false

C both p and q are false

D at least one is false

Understand It with Pulse | Flag a mistake

20 **A truth table for 3 variables has how many rows?**

ANSWER _____

Understand It with Pulse | Flag a mistake

21 **Think about the principle. Deductive reasoning moves from**

A general principles to a specific conclusion

B specific cases to a general claim

C a guess to a proof

D an example to a counterexample

Understand It with Pulse | Flag a mistake

22 **Recall the principle. Inductive reasoning moves from**

A general principles to a specific conclusion

B specific cases to a general claim

C a theorem to an axiom

D a conclusion to a premise

Understand It with Pulse | Flag a mistake

23 **Apply the principle. In set notation, A union B contains elements in**

- **A** A and B only
- **B** A only
- **C** A or B or both
- **D** neither A nor B

Understand It with Pulse | Flag a mistake

24 **Set A has 40 elements, set B has 30 elements, and their intersection has 15 elements. The union has how many elements?**

ANSWER _____

Understand It with Pulse | Flag a mistake

25 **Review the principle. One counterexample is enough to disprove**

A a universal statement

B a single example

C a definition

D a conditional with a true premise

Understand It with Pulse | Flag a mistake

ANSWER KEY

1. A
2. B
3. C
4. D
5. A
6. 16
7. C
8. D
9. A
10. 45
11. C
12. D
13. A
14. 35
15. C
16. D
17. A
18. B
19. C
20. 8
21. A
22. B
23. C
24. 55
25. A

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