Logical Reasoning — Practice Test

Prince Edward Island Foundations of Mathematics 12 • 25 questions

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 **A set with 5 elements has this many proper subsets**

ANSWER _____

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2 **A set with 4 elements has this many subsets**

ANSWER _____

Understand It with Pulse | Flag a mistake

3 **A truth table with 2 simple statements has this many rows**

ANSWER _____

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4 **In a class, 30 students play soccer, 20 play hockey, and 10 play both sports. The number who play at least one sport is**

ANSWER _____

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5 **In a club, 25 members swim, 15 members run, and 5 do both activities. The number who do at least one activity is**

ANSWER _____

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6 **A biconditional p if and only if q is true when**

A p is true only

B q is false only

C p and q differ

D p and q have the same truth value

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7 **A club has 45 members in choir and 35 in band, with 15 in both. The number in at least one group is**

ANSWER _____

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8 **A contradiction is a statement that is**

A always false

B always true

C sometimes false

D always conditional

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9

A counterexample shows a general claim is

A unprovable

B circular

C false

D true

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10

A tautology is a statement that is

A never provable

B always true

C always false

D sometimes true

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11 **A valid argument has a conclusion that**

- **A** contradicts a premise
- **B** must be true if the premises are true
- **C** is always false
- **D** is probably true

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12 **Deductive reasoning moves from**

- **A** specific cases to a general rule
- **B** an example to a definition
- **C** a guess to a proof
- **D** a general rule to a specific case

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13 **In a group, 80 students take math, 60 take art, and 40 take both. The number taking at least one subject is**

ANSWER _____

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14 **In a survey, 70 people like tea, 50 like coffee, and 30 like both. The number who like at least one drink is**

ANSWER _____

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15 **Inductive reasoning moves from**

A specific cases to a general rule

B a general rule to a specific case

C a false premise to a truth

D one definition to another

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16 **The contrapositive of 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

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17 **A set with 2 elements has this many proper subsets**

ANSWER _____

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18 **A set with 7 elements has this many subsets**

ANSWER _____

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19 **A truth table with 3 simple statements has this many rows**

ANSWER _____

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20 **In a class, 40 students play soccer, 25 play hockey, and 15 play both sports. The number who play at least one sport is**

ANSWER _____

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21 **In a club, 60 members swim, 40 members run, and 25 do both activities. The number who do at least one activity is**

ANSWER _____

Understand It with Pulse | Flag a mistake

22 **A set with 6 elements has this many proper subsets**

ANSWER _____

Understand It with Pulse | Flag a mistake

23 **A set with 8 elements has this many subsets**

ANSWER _____

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24 **A truth table with 4 simple statements has this many rows**

ANSWER _____

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25 **In a class, 50 students play soccer, 30 play hockey, and 20 play both sports. The number who play at least one sport is**

ANSWER _____

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ANSWER KEY

1. 31
2. 16
3. 4
4. 40
5. 35
6. D
7. 65
8. A
9. C
10. B
11. B
12. D
13. 100
14. 90
15. A
16. D
17. 3
18. 128
19. 8
20. 50
21. 75
22. 63
23. 256
24. 16
25. 60

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