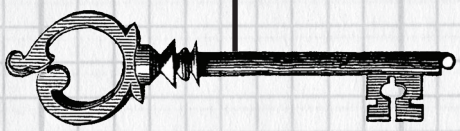
INTERMEDIATE LOGIC

Mastering Propositional Arguments

TEST and QUIZ PACKET: THIRD EDITION

Canon Logic Series



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Moscow, Idaho

INTERMEDIATE LOGIC | QUIZ 1

Lessons 1–2 (25 points)

Name _____

1. How does *propositional logic* differ from *categorical logic*? (3) _____

_____

_____

2. What is a *proposition*? (1) _____

3. What does it mean that a proposition is *truth functional*? (2) _____

_____

_____

4. Give an example of a proposition that is *not* truth functional. (2)

_____

5. Give an example of a *simple* proposition. (2)

_____

Problems 6-12: Given: **V** means *You eat your veggies.*
M means *You eat your meat.*
D means *You get dessert.*

Translate the following symbolic propositions into words.

6. ~ V (1) _____

7. M ∨ ~ D (2) _____

8. ~ (V • M) (2) _____

Translate the following propositions into symbols.

9. You eat neither your veggies nor your meat. (2) _____

10. You eat your veggies but you do not get dessert. (2) _____

11. You eat your meat or your veggies, but you don't eat both. (3) _____

12. Are the letters **V**, **M**, and **D** used above *constants* or *variables?* Explain how you know. (3)

_____

_____

INTERMEDIATE LOGIC | QUIZ 2

Lessons 3–4 (18 points)

Name _____

1. Complete the truth table for the conditional logical operator (2):

p	q	p ⊃ q
T	T	
T	F	
F	T	
F	F	

Problems 2-7: Given the following: **K** means *The knight attacks the dragon.*
D means *The dragon devours the damsel.*
T means *The damsel is trapped in the tower.*

Translate the symbolic proposition into English.

2. T ⊃ D (2) _____

_____

3. D • ~ K (2) _____

_____

4. (T ∨ D) ⊃ K (3) _____

_____

Symbolize the proposition. (2 each)

5. The knight attacks the dragon if the damsel is trapped in the tower. _____
6. The knight attacks the dragon only if the dragon devours the damsel. _____
7. The damsel is trapped in the tower unless the dragon devours the damsel. _____

Problems 8-10: If **A** and **B** are true propositions, and **X** and **Y** are false propositions, determine the truth value of the given compound proposition. Circle T for true, F for false. (1 each)

8. X ⊃ A T F
9. B ⊃ (~ X ⊃ Y) T F
10. Y ⊃ X T F

INTERMEDIATE LOGIC | Test 1, Form A

Lessons 1–4 (40 points)

Name _____

1. What is another word for a *proposition*? (1) _____

2. Give an example of a truth-functional, compound proposition (in words, not symbols). (2)

_____

_____

3. Explain the major differences between *simple propositions* and *compound propositions.* (3)

_____

_____

_____

4. What are the differences between *propositional constants* and *propositional variables*? (3)

_____

_____

_____

Problems 5-12: Symbolize the proposition using the given constants.

M means *We see a movie.* **P** means *We eat popcorn.*
C means *We eat candy.* **G** means *We play a game.*

5. We do not see a movie. (1) _____

6. We eat popcorn and candy. (1) _____

7. We see a movie or play a game. (1) _____

8. We do not both see a movie and play a game. (2) _____

9. We do not eat popcorn but we see a movie. (2) _____

10. If we see a movie then we eat popcorn. (1) _____

11. We play a game and eat candy, or we see a movie and eat popcorn. (2) _____

12. If we see a movie then if we eat popcorn then we do not eat candy. (3) _____

13. Complete the truth table for each of the given compound propositions. (4)

p	q	~ p	p ∨ q	p • q	p ⊃ q
T	T				
T	F				
F	T				
F	F				

Problems 14-15: Construct the truth table for the compound proposition on the line to the right.

14. ~(~p ∨ q) (4) _____

15. p ⊃ (q • r) (5) _____

Problems 16-20: Assume the propositions **A** and **B** are *true*, **X** and **Y** are *false*, and **P** and **Q** are an *unknown* truth value. Find the truth value of each compound proposition. If true circle T, if false circle F. If the truth value cannot be determined, circle ? (1 each)

16. A ∨ X T F ?

17. Y • P T F ?

18. B ⊃ Q T F ?

19. X ⊃ Q T F ?

20. (A ∨ P) • X T F ?

INTERMEDIATE LOGIC | Test 1, Form B

Lessons 1–4 (41 points)

Name _____

1. Give a synonym for the term *proposition*. (1) _____

2. What is a *logical operator*? (2) _____

_____

3. What is a propositional *variable?* (2) _____

_____

4. Give an example of a truth-functional, compound proposition (in words, not symbols). (2)

_____

_____

Problems 5-13: **M** means *I listen to music.* **S** means *I like to sing along.*
D means *I like to dance.* **P** means *I play an instrument.*

Symbolize the following propositions:

5. I do not play an instrument. (1) _____

6. If I listen to music, then I like to dance or sing along. (2) _____

7. I like to sing along unless I play an instrument. (2) _____

8. I neither listen to music nor play an instrument. (2) _____

9. I do not like to both dance and sing along. (2) _____

10. I listen to music only if I like to sing along. (2) _____

Translate the following symbolic propositions:

11. $\sim S \vee \sim P$ (2) _____

12. $P \bullet \sim S$ (2) _____

13. $(M \bullet \sim P) \supset S$ (3) _____

_____

14. Complete the truth table for each of the given compound propositions. (4)

p	q	~ p	p • q	p ∨ q	p ⊃ q
T	T				
T	F				
F	T				
F	F				

Problems 15-16: Construct the truth table for the compound proposition on the line to the right.

15. ~ p ⊃ q (3) _____

16. p • (q ∨ r) (5) _____

Problems 17-20: Assume the propositions **A** and **B** are *true*, **X** and **Y** are *false*, and **P** and **Q** are an *unknown* truth value. Find the truth value of each compound proposition. If true circle T, if false circle F. If the truth value cannot be determined, circle ? (1 each)

17. P • X T F ?

18. ~ (X ∨ Y) T F ?

19. ~ B ⊃ Q T F ?

20. P ⊃ (A • P) T F ?