Logic

Philosophy

Logic CATEGORICAL PROPOSITIONS Temporary workers are not eligible for fringe benefits. Translation: No temporary workers qualify for fringe benefits.

Letter designation: B

Quantity: Universal

Quality: Negative

Distribution of terms: Subject and predicate are both distributed.

2) Not all guilt feelings are psychological aberrations.

Translation: Some guilty feelings are psychological aberrations.

Letter designation: B

Quantity: Non-universal

Quality: Negative.

Distribution of terms: Subject is not distributed, predicate is distributed.

3) Some television shows that depict violence incite violence.

Translation: Not all television shows that depict violence incite violence.

Letter designation: A

Quantity: Universal

Quality: Affirmative

Distribution of terms: Subject is not distributed, predicate is distributed.

4) Joy is spread wherever he goes.

Translation: Wherever he goes are the places joy spreads.

Letter designation: B

Quantity: Universal

Quality: Affirmative

Distribution of terms: Subject is distributed, predicate is not distributed.

5) Coco is a feline.

Translation: Coco is the name of a cat.

Letter designation: A

Quantity: Universal

Quality: Affirmative

Distribution of terms: Subject and predicate are both distributed.

VALIDITY OF INFERENCES

6) Some shellfish are not pearl-producers.

Therefore, it is false that all shellfish are pearl-producers.

Valid? Yes

Why or why not? The A statement is false. By subalternation, truth flows downward, which makes the I statement false. Nonetheless, in this case, the I statement is shown as true, so the inference is valid.

7) It is false that some tooth fairies are daytime visitors.

Therefore, some tooth fairies are not daytime visitors.

Valid? No.

Why or why not? The A statement is true. By subalternation, truth flows downward, which makes the I statement true. Nonetheless, in this case, the I statement is shown as false, so the inference is invalid.

8) It is false that some forms of human creativity are activities amenable to mathematical analysis.

Therefore, it is false that all forms of human creativity are activities amenable to mathematical analysis.

Valid? No.

Why or why not? The A statement is true. By subalternation, truth flows downward, which makes the I statement true. Nonetheless, in this case, the I statement is shown as false, so the inference is invalid.

9) It is false that all homemakers are people with real jobs.

Therefore, it is false that no homemakers are people with real jobs.

Valid? No.

Why or why not? The A statement is true. By subalternation, truth flows downward, which makes the I statement true. Nonetheless, in this case, the I statement is shown as false, so the inference is invalid.

10) Some obsessive-compulsive behaviors are not curable diseases.

Therefore, it is false that no obsessive-compulsive behaviors are curable diseases.

Valid? Yes.

Why or why not? The A statement is false. By subalternation, truth flows downward, which makes the I statement false. Nonetheless, in this case, the I statement is shown as true, so the inference is valid.

VENN DIAGRAM PROPOSITIONS

11) Some murals by Diego Rivera are works that celebrate the revolutionary spirit.

Diagram number: 4

12) Some forms of carbon are not substances with a crystalline structure.

Diagram number: 1

13) No unpersecuted migrants are migrants who seek asylum.

Diagram number: 2

14) All opponents of gay marriage are opponents of civil unions.

Diagram number: 3

OPERATIONS AND RULES

15) Some crossword puzzles are challenges that are hard to meet.

Therefore, some crossword puzzles are not challenges that are easy to meet.

Operation: Conversion

Rule: Alter the quantity, and substitute the subject term with the predicate term.

16) Some crossword puzzles are challenges that are hard to meet.

Therefore, some challenges that are hard to meet are crossword puzzles.

Operation: Obversion

Rule: Alter the quality, and substitute both the subject and complement terms with the predicate term.

17) All crossword puzzles are challenges that some people can meet.

Therefore, all challenges that no one can meet are challenges other than crossword puzzles.

Operation: Contraposition

Rule: Alter the quantity, and substitute the subject term with the complement term.

18) No crossword puzzles are challenges that no one can meet.

Therefore, all crossword puzzles are challenges that some people can meet.

Operation: Obversion

Rule: Alter the quality, and substitute the predicate term with the complement term.

19) Some crossword puzzles are not challenges that I can meet.

Therefore, some crossword puzzles are challenges that I cannot meet.

Operation: Conversion

Rule: Alter the quality, and substitute the predicate term with the complement term.

20) Some crossword puzzles are challenges that I cannot meet.

Therefore, some challenges that I cannot meet are crossword puzzles.

Operation: Conversion

Rule: Alter the quality, and substitute the subject term with the predicate term.

VALIDITY OF IMMEDIATE INFERENCES

21) Some jobs in health care are not glamorous occupations.

Therefore, some unglamorous occupations are jobs in health care.

1. It is true that some J are GO.(Basis, presumed true)

2. No J are non-G.(By Conversion)

3. All J are G.(By Contraposition)

4. Some non-G J are J.(By Obversion)

The inference is invalid, since 2 is the conclusion.

22) All Barbie dolls are toys that engender a false sense of values.

Therefore, it is false that all Barbie dolls are toys that do not engender a false sense of values.

1. It is true that all B are E.(Basis, presumed true)

2. All B are E.(By subalternation)

3. No B are non-E.(By Conversion)

4. Some B are non-E.(By Contradiction)

The inference is valid, since 1 is the conclusion.

23) It is false that no meat-avoiding vegetarians are individuals with a high-protein diet.

Therefore, no individuals with a high-protein diet are meat-avoiding vegetarians.

1. It is false that some MV have HD.(Premise, presumed false)

2. Some MV have HD.(By contradiction)

3. Not all MV have HD.(By obversion)

4. Some MV have HD.(By subalternation)

The inference is valid, since 4 is the conclusion.

24) All porcelain figurines are fragile artifacts.

Therefore, it is false that some porcelain figurines are not fragile artifacts.

1. It is true that some G are B.(Premise, assumed true)

2. No G are B.(By contradiction)

3. All G are non-B.(By obversion)

4. Some G are non-B.(By subalternation)

The inference is valid, since 3is the conclusion.

25) Some hedge-fund managers are not responsible investors.

Therefore, some responsible investors are not hedge-fund managers.

1. It is true that some HM are RI.(Premise, presumed true)

2. Some HM are RI.(By Contraposition)

3. Not all HM are RI.(By subalternation)

4. Some HM are not RI.(By obversion)

The inference is valid, since 3 is the conclusion.