Unit 3: Categorical Logic

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| **Part I.** For each of the following statements, identify the numbered words as one of the following |
| a.) quantifier  b.) part of the subject term  c.) part of the copula  d.) part of the predicate term  Then answer the questions that follow each sentence. |

No

7. Is the statement above (a) universal or (b) particular?

8. Is the statement above (a) affirmative or (b) negative?

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| (9.) | (10.) | (11.) | (12.) | (13.) | (14.) |
| Some | animals | are | not | flying | things. |

15. Is the statement above (a) universal or (b) particular?

16. Is the statement above (a) affirmative or (b) negative?

(17) (18) (19) (20)

No mutants are turtles.

21. Is the statement above (a) universal or (b) particular?

22. Is the statement above (a) affirmative or (b) negative?

|  |  |
| --- | --- |
| **Part II.** Identify each of the following statements as (a) A, (b) E, (c) I, or (d) O.   1. Some vampires are not teenagers with great hair. 2. No vampires are creatures that sparkle in the sunlight. 3. All vampires are creatures that fear sunlight. 4. Some goth enthusiasts are drug addicts. | 1. All nerds are geeks. 2. Some geeks are not nerds. 3. No robots are chickens. 4. Some chickens are robots. |

**Part III.** The instructions for part IV refer to Figure IV and Answer-Code IV.

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| a.) shade out region 1  b.) shade out region 2  c.) shade out region 3  d.) shade out region 4  e.) x in region 1  ab.) x in region 2  ac.) x in region 3  ad.) x in region 4 |

Answer-Code IV:

Figure IV

1

2

3

4

P

S

For each of the following statements, draw a Venn diagram, with the subject on the left and the predicate on the right. Then, for each number, choose the letter from Answer-Code IV that describes your Venn diagram in relation to Figure IV. I do not need to see your diagram.

1. No zebras are painted horses.
2. Some oranges are fruits painted to look more orange.
3. All leprechauns are hard drug users.
4. Some humans are not mortals.
5. No demigods are drivers of semi-trucks.
6. Some computers are servers.
7. All paladins are templars.
8. Some pirates are not thieves.
9. All boxers are athletes.
10. No people with Parkinson’s disease are people who got Parkinson’s disease by boxing.

**Part IV:** For each of the following statements, choose the best translation into standard form.

1. I don’t want no scrub.
   1. All scrubs are not things I want.
   2. No scrubs are things that I want.
   3. Most things I want are not scrubs.
   4. A scrub is a guy can’t get no love from me.
2. C3PO has shut down all the garbage compactors on the detention level.
   1. No garbage compactors on the detention level were shut down by C3PO.
   2. Some garbage compactors on the detention level are garbage compactors that were shut down by C3PO.
   3. All garbage compactors on the detention level are garbage compactors that were shut down by C3PO.
   4. Luke Skywalker was crushed by a garbage compactor and died.
3. People under 25 are all Justin Bieber fans.
   1. All people under 25 are Justin Bieber fans.
   2. Some people under 25 are Justin Bieber fans.
   3. No people over 25 are Justin Bieber fans.
   4. All Justin Bieber fans are people who are under 25.
4. All persons over 16 are licensed to drive a car in the U.S.
   1. Some persons over 16 are licensed to drive a car in the U.S.
   2. All persons over 16 are persons licensed to drive a car in the U.S.
   3. All persons licensed to drive a car in the U.S. are persons over 16.
   4. Teenagers get in more accidents.
5. Only persons over 16 are licensed to drive a car in the U.S.
   1. Some persons over 16 are licensed to drive a car in the U.S.
   2. All persons over 16 are licensed to drive a car in the U.S.
   3. All persons licensed to drive a car in the U.S. are persons over 16.
   4. Teenagers get in more accidents.
6. Some TV’s are ugly.
   1. Some TV’s are ugly things.
   2. Some TV’s are not ugly things.
   3. All TV’s are ugly things.
   4. All TV’s are things some of which are ugly things.
7. There are no teenage mutant ninja turtles.
   1. No turtles are teenage mutant ninja turtles.
   2. Some turtles are not teenage mutant ninja turtles.
   3. Some turtles are non-ninja turles.
   4. Shredder eats turtle soup.
8. Every step you take, I’ll be watching you.
   1. All times I’ll be watching you are times you’re stepping.
   2. All times you’re stepping are times I’ll be watching you.
   3. No times you are stepping are times I’ll be watching you.
   4. Every move you make, every vow you break, I’ll be watching you.
9. John always drinks whenever he plays guitar.
   1. All times John drinks are times John plays guitar.
   2. All times John plays guitar are times John drinks.
   3. No times John drinks are times he doesn’t play guitar.
   4. Some times John drinks are not times he plays guitar.
10. Not all video games are violent.
    1. Some video games are not violent games.
    2. Some video games are violent games.
    3. No video games are violent games.
    4. All video games are not violent games.

**Part V: Categorical Syllogisms**

**Syllogism 1**

* 1. All candidates for president are lawyers.
  2. No scumbags are candidates for president.

1. Therefore, no scumbags are lawyers.

Fill in the diagram for *the premises and only the premises* of the syllogism, with the minor term on the left and the major term on the right. Remember to do premises that involve shading first. Describe your diagram by choosing the letter from the answer-code that describes the corresponding region for each number.

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54

56

57

51

52

53

S

L

C

Answer-Code

1. shaded
2. blank
3. x on the border
4. x completely inside

58

59. Is the syllogism (a) valid or (b) not valid?

60. Is the syllogism (a) valid or (b) not valid?

**Syllogism 2**

P1. Some aggressive insects are not dangerous insects.

P2. Some bees are not aggressive insects.

1. Therefore, some bees are not dangerous insects.

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62

63

B

D

A

Answer-Code

1. shaded
2. blank
3. x on the border
4. x completely inside

68

1. Is the syllogism (a) valid or (b) not valid?
2. Is the syllogism (a) valid or (b) not valid?

**Syllogism 3**

P1. Some legislators are stupid people.

P2. All legislators are important people.

1. Therefore, some important people are stupid people.

75

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77

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72

73

L

Answer-Code

1. shaded
2. blank
3. x on the border
4. x completely inside

78

I

S

1. Is the syllogism (a) valid or (b) not valid?
2. Is the syllogism (a) valid or (b) not valid?

**Syllogism 4**

* 1. Some important people are knuckleheads.
  2. All talk show hosts are important people.

1. Therefore, some talk show hosts are knuckleheads.

85

84

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87

81

82

83

I

Answer-Code

1. shaded
2. blank
3. x on the border
4. x completely inside

88

T

K

89. Is the syllogism (a) valid or (b) not valid?

90. Is the syllogism (a) valid or (b) not valid?

**Syllogism 5**

* 1. Some unicorns are not white horses.
  2. No white horses are mythical creatures.

1. Therefore, some mythical creatures are not unicorns.

Proceed as with syllogism 1.

95

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91

92

93

M

U

WH

Code Reminder:

1. shaded
2. blank
3. x on the border
4. x completely inside

98

99. Is the syllogism (a) valid or (b) not valid?

1. Is the syllogism (a) valid or (b) not valid?

**Extra Credit:** Consider the following argument. It is not a categorical syllogism in standard form, but it can be manipulated into one, by replacing some statements with equivalent statements. Translate it into a categorical syllogism in standard form. Then do a Venn diagram for the argument and state whether it is valid. **(possible 10 extra credit points)**

All people with self-control are wise people.

Some foolish people are teetotalers.

Therefore, some teetotalers are not people with self-control.