

Optional Logic Exam

NAME: _____

“By signing, I promise that I received no help on this exam from any other person.”

SIGNATURE: _____

IDENTIFY THE PREMISES AND CONCLUSION. WRITE A ‘P’ OVER EACH PREMISE AND A ‘C’ OVER THE CONCLUSION.

1. As the denial or perversion of justice by the sentences of courts, as well as in any other manner, is with reason classed among the just causes of war, it will follow that the federal judiciary ought to have cognizance of all causes in which the citizens of other countries are concerned.

2. Women of the working class, especially wage workers, should not have more than two children at most. The average working man can support no more and the average working woman can take care of no more in decent fashion.

STATE WHETHER EACH OF THE FOLLOWING IS AN INDUCTIVE ARGUMENT OR A DEDUCTIVE ARGUMENT.

3. If Alexander the Great died from typhoid fever, then he became infected in India. Alexander the Great did die from typhoid fever. Therefore, he became infected in India.

4. We tell people not to speed, but equip cars with air bags in case they do. So

what's wrong with telling kids not to have sex, but making Plan B available in case they do?

5. The graphical method for solving a system of equations is an approximation, since reading the point of intersection depends on the accuracy with which the lines are drawn and on the ability to interpret the coordinates of the point.

6. The picnic scheduled in the park for tomorrow will almost certainly be cancelled. It's been snowing for six days straight.

WRITE WHICH FALLACY IS COMMITTED BY THE FOLLOWING ARGUMENTS. IF NO FALLACY IS COMMITTED, WRITE "NO FALLACY".

7. If a car breaks down on the freeway, a passing mechanic is not obligated to render emergency road service. For similar reasons, if a person suffers a heart attack on the street, a passing physician is not obligated to render emergency medical assistance.

8. Would you rather invest in our nation's children or Pentagon waste? The choice is yours.

9. I prayed for the U.S. Senate to defeat the prayer amendment—and it did. There is a God.

10. Criminals are basically stupid, because anyone who isn't basically stupid wouldn't be a criminal.

CHANGE ONLY THE QUALITY OF THE FOLLOWING STATEMENTS

11. No harbors are safe places to swim.

12. Some trees are things we can climb.

CHANGE THE QUANTITY AND THE QUALITY OF THE FOLLOWING STATEMENTS

13. All beavers are animals that make dams

14. Some tumors are cancerous.

FOR 15-17: FIRST, SAY WHICH RELATIONSHIP THE PREMISE BEARS TO THE CONCLUSION – CONVERSION, OBVERSION, OR CONTRAPOSITION. SECOND, DETERMINE WHETHER THE ARGUMENT IS VALID OR INVALID.

15. Some organ transplants are not sensible operations. Therefore, some organ transplants are senseless operations.

16. No individuals who laugh all the time are people with a true sense of humor. Therefore, no people with a true sense of humor are individuals who laugh all the time.

17. All fire-breathing dragons are lizards that languish in soggy climates. Therefore, no fire-breathing dragons are lizards that flourish in soggy climates.

USE VENN DIAGRAMS TO DETERMINE WHETHER THE FOLLOWING STANDARD-FORM CATEGORICAL SYLLOGISMS ARE VALID FROM THE BOOLEAN STANDPOINT, VALID FROM THE ARISTOTELIAN STANDPOINT, OR INVALID.

18. No accountants are literature fans. No literature fans are people who walk on high-wires. Therefore, no people who walk on high-wires are accountants.

19. No people who wear gray are artistic individuals. Some video game designers are not artistic individuals. Therefore, some video game designers are not people who wear gray.

20. Some individuals who risk heart disease are people who will die young. Some smokers are individuals who risk heart disease. Therefore, some smokers are people who will die young.

21. No spurned lovers are Valentine's Day fanatics. Some moonstruck romantics are Valentine's Day fanatics. Therefore, some moonstruck romantics are not spurned lovers.

USE TRUTH TABLES TO DETERMINE WHETHER THE FOLLOWING PROPOSITIONS ARE TAUTOLOGOUS, CONTINGENT, OR INCONSISTENT.

22. $(p \vee q) \supset \sim (p \bullet q)$

23. $p \bullet (q \supset (q \vee (p \supset \sim q)))$

24. $\sim (\sim ((p \vee \sim q) \bullet (q \vee \sim r)) \bullet \sim (\sim (q \equiv r) \bullet (\sim p \supset r)))$

$$25. (p \supset q) \supset (((\sim r \vee s) \bullet (q \vee s)) \equiv ((p \supset r) \supset (\sim s \bullet p)))$$

USE THE RULES OF IMPLICATION AND REPLACEMENT TO SHOW THAT THE FOLLOWING ARGUMENTS ARE VALID.

26.

$$1. (A \vee (K \bullet J)) \supset (\sim E \bullet \sim F)$$

$$2. M \supset (A \bullet (P \vee R))$$

$$3. M \bullet U \quad \quad \quad / \sim E \bullet A$$

27.

$$1. H \equiv I$$

$$2. H \supset (I \supset F)$$

$$3. (\sim H \vee I) \supset F \quad \quad \quad / F$$

28.

1. $P \supset Q$

2. $Q \supset \sim (R \vee P)$

3. $\sim S \supset Q$

4. $S \supset (M \supset L)$

5. R

6. $M \vee P$ $/ L$

29.

1. $P \vee R$

2. $\sim P \vee (Q \bullet R)$

3. $R \supset (Q \bullet S)$ $/ Q \bullet S$

30.

1. $(L \vee P) \supset U$

2. $(M \supset U) \supset I$

3. P $/ I$

31.

1. $G \equiv M$

2. $G \vee M$

3. $G \supset (M \supset T)$ $/ T$

32.

1. $\sim Q \supset (C \bullet B)$

2. $\sim T \supset (B \bullet H)$

3. $\sim (Q \bullet T)$ / B

33.

1. $\sim (S \supset Q)$

2. $(M \bullet N) \supset (O \vee P)$

3. $\sim (O \vee (N \bullet P))$

4. $N \equiv \sim (Q \bullet R)$

$I \sim (M \vee Q)$