

## Traditional Test Bank

### Chapter 1 WHAT LOGIC STUDIES

Choose the correct Answer: “true” or “false.”

1. An argument is any group of statements.

*Answer:* False

2. A statement is a sentence that must be true.

*Answer:* False

3. An argument must have at least one premise.

*Answer:* True

4. Every statement is either true or false; these two possibilities are called premise values.

*Answer:* False

5. A proposition is the information content imparted by a statement, or simply put, its meaning.

*Answer:* True

6. If a passage expresses a reasoning process, then it makes a deductive claim.

*Answer:* False

7. Every explanation is an argument.

*Answer:* False

8. A deductive argument is one in which it is claimed that the conclusion follows necessarily from the premises.

*Answer:* True

9. An inductive argument is one in which it is claimed that the premises make the conclusion probable.

*Answer:* True

10. A valid deductive argument is one where, assuming the premises are true, it is sometimes possible for the conclusion to be false.

*Answer:* False

11. An invalid deductive argument is one where, assuming the premises are true, it is impossible for the conclusion to be false.

*Answer:* False

12. A valid argument can be an unsound argument.

*Answer:* True

13. An invalid argument can be a sound argument.

*Answer:* False

14. A counterexample to a statement is evidence that shows the statement is true.

*Answer:* False

15. A counterexample to an argument is evidence that the conclusion is false.

*Answer:* False

16. A single counterexample to an inductive argument is enough to show that an argument is invalid.

*Answer:* False

17. A strong inductive argument is an argument such that if the premises are assumed to be true, then the conclusion is necessarily true.

*Answer:* False

18. A weak inductive argument is an argument such that if the premises are assumed to be true, then the conclusion is probably true.

*Answer:* False

19. An inductive argument is cogent when the argument is strong and the premises are true.

*Answer:* True

20. An inductive argument is uncogent only when the premises are false.

**Answer:** False

**Pick out the *premises* and *conclusions* of the following arguments.**

**21.** Hamburgers are loaded with saturated fat and sodium. Pizza is loaded with saturated fat and sodium. Too much saturated fat and sodium is harmful to your heart. Jim takes in too much saturated fat and sodium. It follows that Jim is harming his heart.

**Answer:**

*Premises:* Hamburgers are loaded with saturated fat and sodium. Pizza is loaded with saturated fat and sodium. Too much saturated fat and sodium is harmful to your heart. Jim takes in too much saturated fat and sodium.

*Conclusion:* Jim is harming his heart.

**22.** Soy bean curd has no taste. The fat in hamburgers is what gives them their great taste. The fat in pizza is what gives it great taste. Food without fat tastes bland. Soy bean curd has no fat.

**Answer:**

*Premises:* The fat in hamburgers is what gives them their great taste. The fat in pizza is what gives it great taste. Food without fat tastes bland. Soy bean curd has no fat.

*Conclusion:* Soy bean curd has no taste.

**23.** Paris is called the “City of Lights.” Las Vegas is also called the “City of Lights.” So, there must be at least two cities with the same nickname.

**Answer:**

*Premises:* Paris is called the “City of Lights.” Las Vegas is also called the “City of Lights.”

*Conclusion:* There must be at least two cities with the same nickname.

**24.** Paris’s Eiffel Tower is three times as tall as the one in Las Vegas. The Luxor Pyramid in Las Vegas is half the size of the original in Egypt. The Statue of Liberty in New York is four times the one in Las Vegas. Thus, every object in Las Vegas is smaller than in other cities.

**Answer:**

*Premises:* Paris’s Eiffel Tower is three times as tall as the one in Las Vegas. The Luxor Pyramid in Las Vegas is half the size of the original in Egypt. The Statue of Liberty in New York is four times the one in Las Vegas.

*Conclusion:* Every object in Las Vegas is smaller than in other cities.

**25.** We should stop interfering in other countries’ affairs. This follows from the fact that we have no moral right to change a country’s way of governing itself. Also, interfering often gets us locked into combat; not to mention that the potential for loss of lives on both sides is high. In addition, the cost of waging wars is astronomical. Any engagement means weakening our already shaky economy. Add the fact that interfering makes us have more enemies around the world who feel threatened by us.

**Answer:**

*Premises:* We have no moral right to change a country’s way of governing itself. Interfering often gets us locked into combat. The potential for loss of lives on both sides is high. The cost of waging wars is astronomical. Any engagement means weakening our already shaky economy. Interfering makes us have more enemies around the world who feel threatened by us.

*Conclusion:* We should stop interfering in other countries’ affairs.

**26.** Building fuel-efficient cars helps reduce gasoline consumption. Dependency on foreign oil for gasoline production is a drain on the economy. Offshore oil drilling is dangerous. Oil spills through faulty drilling are hazardous to life; so are large tanker spills. Carbon emissions are hurting the environment. We need to start building more fuel-efficient cars.

**Answer:**

*Premises:* Building fuel-efficient cars helps reduce gasoline consumption. Dependency on foreign oil for gasoline production is a drain on the economy. Offshore oil drilling is dangerous. Oil spills through faulty drilling are hazardous to life. Large tanker spills are hazardous to life. Carbon emissions are hurting the environment.

*Conclusion:* We need to start building more fuel-efficient cars.

**Determine whether or not the following passages contain *arguments*.**

27. I like candy. I love chocolate. I hate peanuts. Also, I don't care for circus acts or water sports. It's okay if you like that stuff.

*Answer:* Not an argument

28. More damage was done last year from hurricanes than earthquakes. There was \$100 million in damages last year from hurricanes. There was \$70 million in damages last year from earthquakes.

*Answer:* Argument

29. Newspapers are a good source of in-depth news and they are easily accessible. Weekly magazines are a good source of in-depth news and they are easily accessible. PBS, CNN, and CSPAN are good sources of in-depth news and they are easily accessible. There is no reason why anyone should remain ignorant of what's going on in the world.

*Answer:* Argument

30. It follows from the fact that she eats pork, chicken, beef, mutton, veal, venison, turkey, and fish that she must not be a vegetarian.

*Answer:* Argument

31. Most scientists agree that global warming is caused by human activity.

*Answer:* Not an argument

32. He was born in 1988. According to the Chinese zodiac, that happens to be a Dragon year. Thus, he is sure to have good fortune all his life.

*Answer:* Argument

33. I got at least a 95 on all my exams in this course. The syllabus says that anything over a 92 is an A. So, I expect to get an A for the course.

*Answer:* Argument

34. Our teacher is funny. She is also helpful. I believe she is a full professor.

*Answer:* Not an argument

35. My brother is going to make a lot of money. Phone apps are big business. Some apps are expensive. Of course, others cost a lot. My brother is creating some new games that he will market as apps.

*Answer:* Argument

36. Sports provide a release from the stress of modern urban life. The release can be achieved either by direct participation or by watching. Relieving social tension can help bond different groups. Consequently, we should support all athletic activity.

*Answer:* Argument

**For each of the following passages, determine whether it is an *argument* or an *explanation*.**

37. Computers will soon be in every home because the cost of buying one goes down dramatically every year.

*Answer:* Argument. The statement "The cost of buying one (a computer) goes down dramatically every year" is a premise used to support the conclusion (a prediction) "Computers will soon be in every home."

38. There has been an overall decrease in violence among humans worldwide throughout recorded history. Biologically speaking, this is because the genetic characteristics for nonviolence have been selected over time by the species.

*Answer:* Explanation. The first statement, "There has been an overall decrease in violence among humans worldwide throughout recorded history," asserts what is believed to be a fact, and the second statement, "Biologically speaking, this is because the genetic characteristics for nonviolence have been selected over time by the species," provides an *explanation* for that fact.

39. Since there is biological evidence that the genetic characteristics for nonviolence have been selected over time by the species, we should see an overall decrease in violence among humans worldwide in the

coming centuries.

**Answer:** Argument. The statement “There is biological evidence that the genetic characteristics for nonviolence have been selected over time by the species” is a premise used to support the conclusion (a prediction), “We should see an overall decrease in violence among humans worldwide in the coming centuries.”

40. She just inherited one million dollars from a rich relative, so she will quit her job soon.

**Answer:** Argument. The statement “She just inherited one million dollars from a rich relative” is a premise used to support the conclusion (a prediction) “She will quit her job soon.”

41. She quit her job today because she inherited one million dollars from a rich relative.

**Answer:** Explanation. The statement “She quit her job today” asserts a fact, and the statement “She inherited one million dollars from a rich relative” provides an *explanation* for that fact.

42. I have a stomachache. It must be those nachos I ate.

**Answer:** Explanation

43. She just ate two plates of nachos. She always gets sick after she eats so much. I bet she gets sick later tonight.

**Answer:** Argument

44. My car won’t start. I must be out of gas.

**Answer:** Explanation

45. My car won’t start. But I just had it tuned up yesterday. So, that mechanic must be incompetent.

**Answer:** Argument

46. My aunt invested \$1000 in the stock market last month. The TV announcer said that the average stock has lost 20% in value this month. I guess we know what that means. My aunt probably lost \$200 in stock value.

**Answer:** Argument

47. Our college football team lost by 30 points yesterday. The quarterback must not have played in the game.

**Answer:** Explanation

**Determine whether the following arguments are best classified as being *deductive* or *inductive*.**

48. Some horses can run a mile in under 3 minutes. Rachel has a horse. Therefore, Rachel’s horse can run a mile in under 3 minutes.

**Answer:** Inductive

49. Every horse has four legs. Samson has a horse. Therefore, Samson’s horse has four legs.

**Answer:** Deductive

50. I caught a firefly. Most fireflies live a short life. Therefore, the firefly I caught probably will live a short life.

**Answer:** Inductive

51. Suzy was born in February. It follows necessarily that Suzy was not born in August.

**Answer:** Deductive

52. Nevin was born in the winter. So probably he was born in January.

**Answer:** Inductive

53. The exam’s range of A scores is 90–100. I got a 98 on the exam. Therefore, I got an A on the exam.

**Answer:** Deductive

54. The exam’s range of A scores is 90–100. I got an A on the exam. Therefore, perhaps I got a 95 on the exam.

**Answer:** Inductive

55. Mary was born on August 12. Mike was born in August, too. There is little chance that Mike was born on the same day as Mary.

**Answer:** Inductive

56. All peaches grow on trees. I am eating a peach, so I am eating something that grew on a tree.

**Answer:** Deductive

57. Many peaches are red. I am eating a peach. So I am eating something red.

**Answer:** Inductive

58. The coin came up tails ten times in a row. It probably will come up heads on the next toss.

**Answer:** Inductive

59. All elements with atomic weights less than 50 are unstable. Q is an element with an atomic weight of 49. Therefore, Q is unstable.

**Answer:** Deductive

60. Most elements with atomic weights less than 50 are unstable. Q is an element with an atomic weight of 49. Therefore, Q is unstable.

**Answer:** Inductive

61. Anyone over 18 years of age can join the military. Linda is 19 years old. Thus, Linda can join the military.

**Answer:** Deductive

62. Most people over 18 are registered to vote. Lisa is 19 years old. So, Lisa is registered to vote.

**Answer:** Inductive

63. Many motorcycles are fast machines. Lou owns a motorcycle. So, Lou's motorcycle is a fast machine.

**Answer:** Inductive

64. Some motorcycles are not fast machines. Lou owns a motorcycle. So, Lou's motorcycle is not a fast machine.

**Answer:** Inductive

65. Every fish has gills. I have twenty fish in my aquarium. It follows that all the fish in my aquarium have gills.

**Answer:** Deductive

66. Most sea creatures have gills. Dolphins are sea creatures. Dolphins probably have gills.

**Answer:** Inductive

67. All vegetables contain antioxidants. All we're having for dinner tonight are artichokes. Artichokes are a vegetable. So, our dinner tonight will contain antioxidants.

**Answer:** Deductive

68. All expatriates live overseas. My uncle is an expatriate. Thus, my uncle lives overseas.

**Answer:** Deductive

69. Only those with tickets can enter the theater. You don't have a ticket. So, you can't enter the theater.

**Answer:** Deductive

70. Most people who listen to loud music with headphones have some hearing loss. I have been listening to loud music with headphones for 5 years, so I probably have some hearing loss.

**Answer:** Inductive

**Create a counterexample or model to show that the following deductive arguments are invalid.**

71. No squares are triangles. No squares are circles. Therefore, no triangles are circles.

No S are T.

No S are C.

No T are C.

**Answer:** The following substitutions create a counterexample: let S = *motorcycles*, T = *cats*, and C = *mammals*.

No motorcycles are cats.

No motorcycles are mammals.

No cats are mammals.

72. All rectangles are squares. All rectangles are parallelograms. Therefore, all parallelograms are squares.

All R are S.

All R are P.

All P are S.

**Answer:** The following substitutions create a counterexample: let R = *puppies*, S = *dogs*, and P = *mammals*.

All puppies are dogs.

All puppies are mammals.

All mammals are dogs.

73. No cars are buses. No cars are trucks. Therefore, no trucks are buses.

No C are B.

No C are T.

No T are B.

**Answer:** The following substitutions create a counterexample: let C = *pigs*, B = *reptiles*, and T = *snakes*.

No pigs are reptiles.

No pigs are snakes.

No snakes are reptiles.

74. All squares are parallelograms. All rectangles are parallelograms. Therefore, all squares are rectangles.

All R are P.

All S are P.

All S are R.

**Answer:** The following substitutions create a counterexample: let S = *cats*, P = *mammals*, and R = *dogs*.

All dogs are mammals.

All cats are mammals.

All cats are dogs.

75. No cars are trucks. No trucks are buses. Therefore, no cars are buses.

No C are T.

No T are B.

No C are B.

**Answer:** The following substitutions create a counterexample: let C = *cats*, T = *snakes*, and B = *mammals*.

No cats are snakes.

No snakes are mammals.

No cats are mammals.

76. All squares are triangles. All triangles are circles. Therefore, all circles are squares.

All S are T.  
All T are C.  
All C are S.

**Answer:** The following substitutions create a counterexample: let S = *puppies*, T = *dogs*, and C = *mammals*.

All puppies are dogs.  
All dogs are mammals.  
All mammals are puppies.

77. No cars are trucks. No trucks are buses. Therefore, no buses are cars.

No C are T.  
No T are B.  
No B are C.

**Answer:** The following substitutions create a counterexample: let C = *mammals*, T = *snakes*, and B = *dogs*.

No mammals are snakes.  
No snakes are dogs.  
No dogs are mammals.

78. No squares are circles. No triangles are circles. It follows that no squares are triangles.

No S are C.  
No T are C.  
No S are T.

**Answer:** The following substitutions create a counterexample: let S = *cats*, C = *snakes*, and T = *mammals*.

No cats are snakes.  
No mammals are snakes.  
No cats are mammals.

79. All squares are rectangles. All squares are parallelograms. It follows that all rectangles are parallelograms.

All S are R.  
All S are P.  
All R are P.

**Answer:** The following substitutions create a counterexample: let S = *puppies*, R = *mammals*, and P = *dogs*.

All puppies are mammals.  
All puppies are dogs.  
All mammals are dogs.

80. No cars are trucks. All trucks are heavy equipment. Therefore, no cars are heavy equipment.

No C are T.  
All T are H.  
No C are H.

**Answer:** The following substitutions create a counterexample: let C = *cats*, T = *dogs*, and H = *mammals*.

No cats are dogs.  
All dogs are mammals.  
No cats are mammals.

**Determine whether the following inductive arguments are *strong* or *weak*.**

81. A few horses can run a mile in under two minutes. Evie has a horse. Therefore, Evie's horse probably can run a mile in under two minutes.

**Answer:** Weak

82. Jules was born in the winter. So he was born in January.

**Answer:** Weak

83. The exam's range of C scores is 70–79. I got a C on the exam. Therefore, maybe I got a 75 on the exam.

**Answer:** Weak

84. Mary was born on August 12. Mike was born in August, too. There is little chance that Mike was born on the same day as Mary.

**Answer:** Strong

85. Some apples are red. I am eating an apple. So I am eating something red.

**Answer:** Weak

86. Several elements with atomic weights less than 50 are unstable. Q is an element with an atomic weight of 49. Therefore, Q is unstable.

**Answer:** Weak

87. Many people over 18 are registered to vote. Lisa is 19 years old. So, Lisa is registered to vote.

**Answer:** Weak

88. Most people who are chosen for the Olympic team are professional athletes. John was chosen for the Olympic team; therefore, John probably is a professional athlete.

**Answer:** Strong

89. Only a few people will be chosen for the Olympic team. Of those receiving phone calls from the selection committee, 20% will make the team. John received a phone call from the selection committee. John will probably make the Olympic team.

**Answer:** Weak

90. There are ten students in my class. Eight students got a perfect score on the last exam. I am probably one of the students who got a perfect score on the last exam.

**Answer:** Strong

91. Jane was born in a leap year. She was probably born on February 29.

**Answer:** Weak

92. Suliman is a senior citizen. Therefore, he is probably over 80 years of age.

**Answer:** Weak

93. Some dogs bite when scared. You are going to scare my neighbor's dog. My neighbor's dog will probably bite you.

**Answer:** Weak

94. Only a few strawberries in that container are sour. The strawberry you picked from that container is



probably sour.

**Answer:** Weak

95. Many drunk drivers get caught and punished eventually. My cousin often drives drunk. He will probably be caught and punished one day.

**Answer:** Weak

96. Jasper was born in the 1980s. Therefore, he was born in 1984.

**Answer:** Weak

97. The vast majority of students who don't have a book for the course, and who don't do the homework, wind up failing the course. I know for a fact that Michael doesn't have a book and he doesn't do the homework. Michael will fail the course.

**Answer:** Strong

98. Leslie works full-time as a librarian. She probably has to work overtime most holidays.

**Answer:** Weak

99. Many Fortune 500 stocks dropped an average of 200 points this week. Brixall is a Fortune 500 stock; thus, it probably dropped 200 points this week.

**Answer:** Weak

100. Most earthquakes do considerable damage to infrastructure when the earthquake occurs near a large city. There was an earthquake today near a large city in South America. There will probably be considerable damage to infrastructure.

**Answer:** Strong

**For each of the following *enthymemes*, determine the missing premise that will create a *valid argument*.**

101. All airplane companies are oil consumers; therefore, all airplane companies are polluters.

**Answer:** All oil consumers are polluters.

102. All trees are oxygen-producing organisms; therefore, all trees are highly-evolved plants.

**Answer:** All oxygen-producing organisms are highly-evolved plants.

103. My car is a Toyota; so, my car is a foreign car.

**Answer:** All Toyotas are foreign cars.

104. All CCTVs are surveillance mechanisms; so, all CCTVs are people watchers.

**Answer:** All surveillance mechanisms are people watchers.

105. My aunt is an aviator; so, my aunt is a licensed pilot.

**Answer:** All aviators are licensed pilots.

106. No astronauts are people afraid of heights; so, no acrophobiacs are astronauts.

**Answer:** All acrophobiacs are people afraid of heights.

107. Shane owns a drum set; thus, Shane is a musician.

**Answer:** Anyone who owns a drum set is a musician.

108. Every musician is a talented individual; thus, every musician has self-discipline.

**Answer:** All talented individuals have self-discipline.

109. All CEOs are people over 30 years of age; so, no CEOs are teenagers.

**Answer:** No teenagers are people over 30 years of age.

110. Every whale is a mammal; therefore, every whale is a warm-blooded animal.

**Answer:** Every mammal is a warm-blooded animal.

111. Only ticket holders are admitted to the show; so, John is a ticket holder.

**Answer:** John is admitted to the show.

112. Anyone who is a surgeon is good at biology; so, my aunt is good at biology.

**Answer:** My aunt is a surgeon.

113. I own a computer; so, I own the future.

**Answer:** Anyone who owns a computer owns the future.

**For each of the following *enthymemes*, supply either the missing premises or the missing conclusion. Apply the *principle of charity* to your reconstructions. Evaluate the resulting arguments and explain your answers.**

**114.** I am eating a banana; therefore, I am eating a fruit.

*Answers:*

*Missing Premise:* All bananas are fruit.

This makes the argument valid. In addition, since the added premise is true, if the first premise is true, then it is a sound argument.

*Missing Premise:* The vast majority of bananas are fruit.

This makes the argument strong. However, since we saw above that we can create a sound argument, this would not be the best reconstruction.

**115.** I am eating a fruit; therefore, I am eating a banana.

*Answers:*

*Missing Premise:* All fruit are bananas.

This makes the argument valid. However, since the added premise is false, this reconstruction is an unsound argument.

*Missing Premise:* The vast majority of fruit are bananas.

This makes the argument strong. However, since most fruit are not bananas, this is probably a false statement as well. This fact makes the argument uncogent.

**116.** Shane owns a Sony; so, it must be a TV.

*Answers:*

*Missing Premise:* All Sonys are TVs.

This makes the argument valid. However, since the added premise is false, this reconstruction is an unsound argument (Sony makes many kinds of products).

*Missing Premise:* The vast majority of Sonys are TVs.

This makes the argument strong. However, we would have to gather data to see if this assertion is true or false. If it is true, then the argument is cogent; if it is false, then the argument is uncogent.

**117.** Shane owns a TV; so, it must be a Sony.

*Answers:*

*Missing Premise:* All TVs are Sonys.

This makes the argument valid. However, since the added premise is false, this reconstruction is an unsound argument.

*Missing Premise:* The vast majority of TVs are Sonys.

This makes the argument strong. However, we would have to gather data to see if this assertion is true or false. If it is true, then the argument is cogent; if it is false, then the argument is uncogent.

**Reconstruct arguments based on your understanding and interpretation of the rhetorical aspect of the passages that follow.**

**118.** You haven't even considered all the alternative positions. Are you really that confident that you are right?

**Answer:** You haven't even considered all the alternative positions.  
You cannot be confident that you are right.

**119.** If it's such a great car, then why is it in the repair shop all the time?

**Answer:** The car is in the repair shop all the time.  
It's not such a great car.

**120.** If the movie was so great, then why has it grossed a paltry \$3 million in its first month of release?

**Answer:** The movie has grossed a paltry \$3 million in its first month of release.  
The movie is not so great.

**Choose the correct Answer: "true" or "false."**

**121.** Arguments with missing premises, missing conclusions, or both, are called enthymemes.

A) True

B) False

**Answer:** A

**122.** We should choose the reconstructed argument that gives the benefit of the doubt to the person presenting the argument. This is referred to as the principle of rhetorical arguments.

A) True

B) False

**Answer:** B

**123.** Sometimes we speak or write for dramatic or exaggerated effect. When this occurs, we are using enthymemes.

A) True

B) False

**Answer:** B

**124.** A rhetorical question cannot be a disguised statement.

A) True

B) False

**Answer:** B

**125.** A conditional statement cannot be used to disguise an implied argument.

A) True

B) False

**Answer:** B

