Exercise Answers for Baronett Chapter 1

Exercises 1B

I.

1. Premises: (a) Exercise helps strengthen your cardiovascular system.

(b) It (exercise) also lowers your cholesterol.

(c) (Exercise) increases the blood flow to the brain.

(d) (Exercise) enables you to think longer.

Conclusion: There is no reason for you not to start exercising regularly.

2. Premise: If you start a strenuous exercise regimen before you know if your body is ready,

you can cause serious damage.

Conclusion: You should always have a physical checkup before you start a rigid exercise

program.

3. Premises: (a) Television commercials help pay the cost of programming.

(b) I can always turn off the sound of the commercials.

(c) (I can) go to the bathroom.

(d) (I can) get something to eat.

(e) (I can get something to) drink.

Conclusion : Commercials are not such a bad thing.

4. Premises: (a) Television commercials disrupt the flow of programs.

(b) Any disruption impedes the continuity of a show.

Conclusion: We can safely say that commercials are a bad thing.

5. Premises: (a) True friends are there when we need them.

(b) They suffer with us when we fail.

(c) They are happy when we succeed.

Conclusion: We should never take our friends for granted.

6. Premises: (a) They say that “absence makes the heart grow fonder.”

(b) I have been absent for the last 2 weeks.

Conclusion: My teachers should really love me.

7. Premise: I think.

Conclusion: I am.

8. Premises: (a) We will eventually be able to replace all organic body parts with artificial parts.

(b) We will be able to live virtually forever by simply replacing the parts when they wearout or become defective.

Conclusion: I believe that humans will evolve into androids.

9. Premises: (a) At one time Gary Kasparov had the highest ranking of any chess grand master in history.

(b) He was beaten in a chess tournament by a computer program called Deep Blue.

Conclusion: The computer program should be given a ranking higher than Kasparov.

10. Premises: (a) It is true that 1 + 4 = 5.

(b) It is also true that 2 + 3 = 5.

Conclusion: (1 + 4) = (2 + 3).

11. Premises: (a) The digital camera on sale today at Cameras Galore has 5.0 megapixels and costs $200.

(b) The digital camera on sale at Camera Warehouse has 4.0 megapixels and it costs $150.

(c) You said that you did not want to spend over $175 for a camera.

Conclusion: You should buy the one at Camera Warehouse.

12. Premises: (a) You did say that you wanted the most megapixels you can get for up to $200.

(b) The digital camera on sale today at Cameras Galore has 5.0 megapixels and costs $200.

(c) The digital camera on sale at Camera Warehouse has only 4.0 megapixels and it costs $150.

Conclusion: You should buy the digital camera at Cameras Galore.

13. Premises: (a) My guru said the world will end on August 6, 2045.

(b) So far everything he predicted has happened exactly as he said it would.

Conclusion: The world will end on August 6, 2045.

14. Premises: (a) Fast-food products contain high levels of cholesterol.

(b) They also contain high levels of sodium, fat, and trans fatty acids.

(c) These things are bad for your health.

Conclusion: I am going to stop eating in fast-food places.

15. Premises: (a) They (vegetables) contain low levels of cholesterol.

(b) They (vegetables) also contain low levels of sodium, fat, and trans fatty acids.

(c) High levels of those things are bad for your health.

Conclusion: You should eat more vegetables.

Exercises 1B

II.

1. Not an argument. The three propositions can be used to support some other claim,

but together they simply form a set of propositions with no obvious premise or conclusion.

2. Argument. The first three statements are premises offered in support of the conclusion. They provide evidence for why you should buy a car.

3. Not an argument. All four statements tell us how the person feels about today’s music and movies, but they neither form a set of premises, nor do any of them act as a conclusion.

4. Argument. The first statement is the conclusion and the other two statements offer reasons in support of the claim that “We are going to have a recession.”

5. Argument. The phrase “It follows from the fact that” identifies the premise, which is offered as support for the conclusion, “she must be a vegetarian.”

6. Not an argument. The two statements do not act as either premises or conclusions; they simply convey information.

7. Argument. The first two statements are premises and the last statement is the conclusion.

8. Not an argument. The statements do not act as either premises or conclusions; they simply convey information.

9. Argument. The premise “She won the lottery” is offered as a reason to conclude that “she will quit her job soon.”

10. Argument. The first two statements are premises and the last statement is the conclusion.

11. Argument. The first three statements are premises that are offered as reasons to support the conclusion “there are in reality no sharp boundaries in the natural world.” The word “so” is a conclusion indicator word.

12. Argument. The conclusion is “we must remain silent.” The two speakers provide reasons to support that claim.

13. Argument. The conclusion is “The handprint on the wall had not been made by the librarian himself.” The premises are “there hadn’t been blood on his hands,” and “the print did not match his [the librarian].”

14. Not an argument. The passage reports the conflicting emotions and thoughts of a person, but it does not offer premises or a conclusion. The psychological “decision” of the character is based on an inevitability of the situation in which he finds himself.

15. Argument. The phrase “for this reason” indicates a conclusion. The passage contains several reasons offered in support of the claim that “sexual selection may be evolution’s most creative force.”

16. Argument. The conclusion indicator word “therefore” precedes the statement “though in her own sense of the words she was a married woman, in the landlady’s sense she was not.” The passage contains reasons offered in support of this claim.

17. Not an argument.

18. Argument. The premise indicator “because” precedes the statement “I don’t take no stock in dead people.” Another premise is “she let it out that Moses had been dead a considerable long time.” The conclusion (indicated by “so”) is “I didn’t care no more about him (Moses).”

19. Argument. The conclusion is “We must educate our children.” The passage contains several premises offered in support of this claim.

20. Argument. The conclusion is “the similarities between the Titanic and Challenger tragedies are uncanny.” The rest of the passage contains reasons offered in support of this claim.

21. Argument. The conclusion (as indicated by the word “Thus”) is “we do not necessarily keep eBooks in compliance with any particular paper edition.”

22. Argument. The conclusion (as indicated by the word “therefore”) is “[he] was one of the lowest in his class.”

23. Argument. The conclusion (as indicated by the word “therefore”) is “Newton’s intelligence came from another intelligence.”

24. Not an argument. The passage contains a satirical look at American Christians.

25. Not an argument. The passage provides a definition of “authoritarian governments” and a definition of “democratic governments.” Although there is no direct conclusion, the author’s choice of definitions indicates his point of view.

26. Argument. We are told that Miss Sweetstory’s book was banned. The statement “Maybe there are some things in her book that we don’t understand” is offered as a reason for why the book was banned. However, this information is then used to conclude “In that case, they should also ban my Math book!”

27. Argument. The conclusion is “The whole story [that government spending can’t create jobs] is a myth.” The passage contains several reasons offered in support of this claim.

28. Argument. The conclusion (as indicated by “so”) is “it is not surprising that, in such a short time, we have not yet settled on the right or commonly agreed upon way to go about it.”

29. Not an argument.

30. Not an argument.

31. Not an argument.

32. Not an argument.

33. Not an argument. The information is offered as advice.

34. Not an argument.

35. Argument. The conclusion is “this [the assumed instinctive belief in God is an argument for His existence] is a rash argument.”

36. Not an argument.

37. Not an argument.

38. Argument. The conclusion is “If you understand, and you show that you understand, you can love, and the situation will change.”

39. Argument. The conclusion (as indicated by “thus”) is “in fact, they all think themselves wiser than you, whatever they may say.”

40. Not an argument.

41. Not an argument.

42. Not an argument.

43. There are actually two arguments. The first conclusion (as indicated by “hence”) is “every prophet can be used by his or her successors to prove their own points of view.” The final conclusion is “This is religion, not science.”

44. Argument. The conclusion (as indicated by “so”) is “I must be wise.”

45. Not an argument.

46. Argument. The conclusion is “As potential investors, you should consider the risks around our long-term focus.” The premises are “Our long-term focus may simply be the wrong business strategy” and “Competitors may be rewarded for short-term tactics and grow stronger as a result.”

47. Argument. The conclusion is “Most of what we’re quick to label racism isn’t really racism.” The passage offers several premises in support of this claim.

48. Argument. The conclusion (as indicated by “thus”) is “I hope that they will quit smoking.”

49. Not an argument.

50. Argument. The conclusion (as indicated by “thus”) is “you and I, dear reader, both possess 100 hunekers of souledness, or thereabouts.”

Exercises 1C

1. Explanation. It is a fact that he did not come to work today; so an explanation is being offered.

2. Argument. The author uses the claim “in [platonic] love all is clear and pure” as support for the conclusion “In platonic love there can be no tragedy.”

3. Argument. The first sentence is offered as the reason (a premise) for the conclusion “A comedy has no chance of winning the Oscar for best picture this year” (which, by the context, has not yet happened).

4. Argument. The statement “it won’t hurt the team if he [the manager] gets thrown out of the game” is offered as a reason for concluding “The job of arguing with the umpire belongs to the manager.”

5. Explanation. The first statement establishes that something has already occurred. The statement “It must be because voters are disappointed with the two-party system” is offered as an explanation of the fact.

6. Explanation. The statement that people cannot argue is offered as an explanation for why people generally quarrel.

7. Argument. The first sentence is the conclusion; it asserts something about the future. The word “because” is being used as a premise indicator word; the information after this word is being offered as support for the conclusion.

8. Argument. The statement “it is no proof that priests can not [lie], or that the Bible does not [lie],” is offered as a premise to support the conclusion “That God cannot lie, is no advantage to your argument.”

9. Explanation. In this context, the word “because” indicates an explanation of what the author means by the term “fall.”

10. Explanation. The statement “genetic characteristics for nonviolence have been selected over time by the species” is offered as an explanation of why “There has been an overall decrease in violence among humans worldwide throughout recorded history.”

11. Explanation. The claim that “the efforts of hundreds of volunteers and donations from

people in all walks of life” is offered as an explanation for how Project Gutenberg exists.

12. Argument. The conclusion is “we should see an overall decrease in violence among humans worldwide in the coming centuries.” The first statement is offered as support for this claim.

13. Explanation. The information is offered to explain why “the iPhone and Android are popular.”

14. Explanation. The information is offered to explain why “This depressed my spirits still more.”

15. Explanation. The information is offered to explain why “it is true that science cannot decide questions of value.”

16. Explanation. The speaker is offering information to explain why he went away.

17. Explanation. The information is offered to explain why Twain “gave up the idea” of making a lecturing trip through the antipodes and the borders of the Orient.

18. Explanation. The last two sentences are offered to explain why Bucke did not believe that the cosmic state is necessarily infallible.

19. Explanation. The speaker says that “I’m offering you today, untried, a chance at supreme power in Asia.” The offer is explained by the fact that it is the speaker’s son to whom the offer is given.

20. Argument. The conclusion is that “you can deduct the cost of your house.” This is (humorously) supported by the reasons given in the passage.

Exercises 1E

1. Deductive. The first premise tells us something definite about every insect. The second premise tells us that an insect is crawling on me. If both premises are assumed to be true, then the conclusion is necessarily true.

2. Inductive. The first premise tells us something about most insects. The second premise tells us that an insect is crawling on me. The use of the word “probably” in the conclusion indicates that it is best classified as an inductive argument.

3. Deductive. The first premise specifies the range of A scores. The second premise tells us that the score was 98. If both premises are assumed to be true, then the conclusion is necessarily true. Also, the phrase “it follows necessarily” indicates that it is best classified as a deductive argument.

4. Inductive. The first premise informs us that there are 11 possible ways to get an A (90–100). Although the second premise informs us that an A was received, it does not conclusively support the conclusion. Therefore, it is best classified as an inductive argument.

5. Deductive. The first premise tells us something about all fires. If both premises are assumed to be true, then the conclusion is necessarily true.

6. Inductive. The first premise only tells us something about some fires.

7. Inductive. There is no indication that the conclusion is meant to follow necessarily from the premises.

8. Inductive. There is no indication that the conclusion is meant to follow necessarily from the premises.

9. Deductive. The first premise tells us something about all elements with atomic weights greater than 64. If both premises are assumed to be true, then the conclusion is necessarily true.

10. Inductive. The first premise only tells us something about the majority of elements with atomic weights greater than 64.

11. Deductive. If the first premise is true, then no antibiotic has any effect on viruses. The second and third premises, if true, tell us you have a virus and are taking an antibiotic. Assuming the premises are true, then the conclusion is necessarily true.

12. Inductive. If the first premise is true, then some antibiotics are effective for treating certain bacterial infections. Therefore, it is best classified as an inductive argument.

13. Deductive. The first premise specifies the minimum age when someone can legally play the slot machines in Las Vegas. The second premise tells us Sam is 33 years old. If both premises are true, then the conclusion is necessarily true.

14. Inductive. We do not know if Sam is a convicted felon. Therefore, it is best classified as an inductive argument.

15. Deductive. The first premise tells us something about all oranges. If both premises are assumed to be true, then the conclusion is necessarily true.

16. Inductive. Although we are told that all oranges are fruit, we are also told that most fruit have seeds. Therefore, it is best classified as an inductive argument.

17. Inductive. We are told something about most Doberman dogs. Also, the use of the word “probably” in the conclusion indicates that it is best classified as an inductive argument.

18. Inductive. We are told something about the vast majority of a survey in the premises. Also, the conclusion uses the phrase “vast majority.” Therefore, this is best classified as an inductive argument.

19. Inductive. The use of the word “probably” in the conclusion indicates that it is best classified as an inductive argument.

20. Deductive. If the first premise is true, then no car battery that has at least one defective cell can be repaired. Assuming the premises are true, then the conclusion is necessarily true.

21. Inductive. The conclusion is not meant to follow necessarily from the premise.

22. Inductive. The conclusion is not meant to follow necessarily from the premises.

23. Deductive. Assuming the premises are true, then the conclusion is necessarily true.

24. Inductive. The conclusion is not meant to follow necessarily from the premises.

25. Inductive. The use of the phrase “you’re more likely” in the conclusion indicates that it is best classified as an inductive argument.

26. Inductive. The conclusion is not meant to follow necessarily from the premises.

27. Inductive. The conclusion is not meant to follow necessarily from the premises.

28. Inductive. The conclusion is not meant to follow necessarily from the premises.

29. Deductive. The decision is intended to follow necessarily from the Supreme Court’s arguments for the unconstitutionality of the law in question.

30. Inductive. The use of the phrase “does not seem to arise” indicates that it is best classified as an inductive argument.

Exercises 1F

I.

1. If we let T = towers less than 200 years old, S = skyscrapers, and B = buildings made of steel, then the argument form is the following:

All T are S.

All B are S.

All B are T.

The following substitutions create a counterexample: let T = cats, S = mammals, and B = dogs.

All cats are mammals.

All dogs are mammals.

All dogs are cats.

Both premises are true, and the conclusion is false. Therefore, the counterexample shows that the argument is invalid.

2. If we let S = skyscrapers, B = buildings made of steel, and T = towers less than 200 years old, then the argument form is the following:

No S are B.

No S are T.

No B are T.

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

No motorcycles are cats.

No motorcycles are mammals.

No cats are mammals.

Both premises are true, and the conclusion is false. Therefore, the counterexample shows that the argument is invalid.

3. If we let P = Phi Beta Kappa members, S = seniors in college, and L = liberal arts majors, then the argument form is the following:

All P are S.

All P are L.

All L are S.

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

All puppies are dogs.

All puppies are mammals.

All mammals are dogs.

Both premises are true, and the conclusion is false. Therefore, the counterexample shows that the argument is invalid.

4. If we let P = Phi Beta Kappa members, S = seniors in college, and L = liberal arts majors, then the argument form is the following:

No P are S.

No P are L.

No L are S.

The following substitutions create a counterexample: let P = pigs, S = reptiles, and L = snakes.

No pigs are reptiles.

No pigs are snakes.

No snakes are reptiles.

Both premises are true, and the conclusion is false. Therefore, the counterexample shows that the argument is invalid.

5. If we let C = computers, E = electronic devices, and A = things that require an AC adapter, then the argument form is the following:

All C are E.

All A are E.

All C are A.

The following substitutions create a counterexample: let C = cats, E = mammals, and A = dogs.

All cats are mammals.

All dogs are mammals.

All cats are dogs.

Both premises are true, and the conclusion is false. Therefore, the counterexample shows that the argument is invalid.

6. If we let C = computers, E = electronic devices, and A = things that require an AC adapter, then the argument form is the following:

No C are E.

No E are A.

No C are A.

The following substitutions create a counterexample: let C = cats, E = snakes, and A = mammals.

No cats are snakes.

No snakes are mammals.

No cats are mammals.

Both premises are true, and the conclusion is false. Therefore, the counterexample shows that the argument is invalid.

7. If we let S = skateboards, W = items made of wood, and F = flammable objects, then the argument form is the following:

All S are W.

All W are F.

All F are S.

The following substitutions create a counterexample: let S = puppies, W = dogs, and F = mammals.

All puppies are dogs.

All dogs are mammals.

All mammals are puppies.

Both premises are true, and the conclusion is false. Therefore, the counterexample shows that the argument is invalid.

8. If we let S = skateboards, W = items made of wood, and F = flammable objects, then the argument form is the following:

No S are W.

No W are F.

No F are S.

The following substitutions create a counterexample: let S = mammals, W = snakes, and F = dogs.

No mammals are snakes.

No snakes are dogs.

No dogs are mammals.

Both premises are true, and the conclusion is false. Therefore, the counterexample shows that the argument is invalid.

9. If we let U = unicorns, I = immortal creatures, and C = centaurs, then the argument form is the following:

No U are I.

No C are I.

No U are C.

The following substitutions create a counterexample: let U = cats, I = snakes, and C = mammals.

No cats are snakes.

No mammals are snakes.

No cats are mammals.

Both premises are true, and the conclusion is false. Therefore, the counterexample shows that the argument is invalid.

10. We must make sure that whatever number of pages we imagine the books to have, the premises both turn out to be true. Suppose Book A has 600 pages. This is possible because the first premise claims that Book A has more than 200 pages, and 600 is more than 200. The first premise is now true. Next, suppose Book B has 525 pages. In that case, the second premise would be true. However, the conclusion now becomes false.

11. We must make sure that whatever number of pages we imagine the books to have the premises must turn out to be true. Suppose Book A has 250 pages and Book B has 525 pages. The conclusion becomes false.

12. We must make sure that whatever birth dates we assign to Barney and Hazel the premises must turn out to be true. Suppose Barney was born in 1947 and Hazel was born in 1956. Both premises are then true. However, the conclusion is then false.

13. We must make sure that whatever birth dates we assign to Fidelix and Gil the premises must turn out to be true. Suppose Fidelix was born in 1989 and Gil was born in 1988. Both premises are then true. However, the conclusion is then false.

14. Suppose Maegan’s yearly income is $75,000, and Jerzy’s yearly income is $40,000. Given this possibility, Maegan spent $25,000 for her car and Jerzy spent $20,000 for his car. In this case, both premises are true, but the conclusion is false.

15. Suppose Wayne’s yearly income is $80,000, and Kaitlin’s yearly income is $60,000. Given this possibility, Wayne spent $40,000 for his car and Kaitlin spent $20,000 for her car. In this case, both premises are true, but the conclusion is false.

16. If we let P = psychiatrists, M = people with medical degrees, and D = people who can prescribe drugs, then the argument form is the following:

All P are M.

All D are M.

All P are D.

The following substitutions create a counterexample: let P = cats, M = mammals, and D = dogs.

All cats are mammals.

All dogs are mammals.

All cats are dogs.

Both premises are true, and the conclusion is false. Therefore, the counterexample shows that the argument is invalid.

17. If we let S = strawberries, F = fruit, and P = plants, then the argument form is the following:

All S are F.

All S are P.

All F are P.

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

All puppies are mammals.

All puppies are dogs.

All mammals are dogs.

Both premises are true, and the conclusion is false. Therefore, the counterexample shows that the argument is invalid.

18. If we let M = members of the U.S. Congress, C = citizens of the United States, and P = people under 21years of age, then the argument form is the following:

All M are C.

All P are C.

No P are M.

The following substitutions create a counterexample: let M = dogs, C = mammals, and P = puppies.

All dogs are mammals.

All puppies are mammals.

No puppies are dogs.

Both premises are true, and the conclusion is false. Therefore, the counterexample shows that the argument is invalid.

19. If we let H = humans, C = things that contain carbon, and I = inanimate objects, then the argument form is the following:

All H are C.

All I are C.

All H are I.

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

All cats are mammals.

All dogs are mammals.

All cats are dogs.

Both premises are true, and the conclusion is false. Therefore, the counterexample shows that the argument is invalid.

20. If we let C = coal mines, D = dangerous areas to work, and I = places inspected by federal agencies, then the argument form is the following:

No C are D.

All D are I.

No C are I.

The following substitutions create a counterexample: let C = cats, D = dogs, and I = mammals.

No cats are dogs.

All dogs are mammals.

No cats are mammals.

Both premises are true, and the conclusion is false. Therefore, the counterexample shows that the argument is invalid.

II.

1. If we let S = Sam goes to the meeting, and J = Joe will stay home, then the argument form is the following:

If S, then J.

It is not the case that S.

Not J. Fallacy of denying the antecedent. The argument is invalid.

Since this is an invalid argument form, we can try to create a counterexample. We can make the letters “S” and “J” stand for any statements that we wish. All we need to do is create a scenario where both premises are true and the conclusion is false. Suppose that we make S = my mom ate an apple, and J = my mom ate a fruit. In addition, suppose that my mom actually ate an orange instead of an apple. Under these assumptions, the first premise would still be true (recall that the conditional statement does not assert that she ate an apple, it just asserts that if she ate an apple, then she ate a fruit). Since we assumed that she ate an orange, the second premise is also true. However, the conclusion is false because she did eat a fruit.

2. If we let C = you take a cut in pay, and L = we will have to lay you off, then the argument form is the following:

C or L.

It is not the case that C.

L. Disjunctive syllogism. The argument is valid.

3. If we let B = today is your birthday, and P = you got some presents, then the argument form is the following:

If B, then P.

P.

B. Fallacy of affirming the consequent. The argument is invalid.

Since this is an invalid argument form, we can try to create a counterexample. We can make the letters “B” and “P” stand for any statements that we wish. All we need to do is create a scenario where both premises are true and the conclusion is false. Suppose that we make B = my mom ate an apple, and P = my mom ate a fruit. In addition, suppose that my mom actually ate an orange instead of an apple. Under these assumptions, the first premise would still be true (recall that the conditional statement does not assert that she ate an apple, it just asserts that if she ate an apple, then she ate a fruit). Since we assumed that she ate an orange, the second premise is also true. However, the conclusion is false because she did not eat an apple.

4. If we let R = animals have rights, and V = animals can vote, then the argument form is the following:

If R, then V.

R.

V. Modus ponens. The argument is valid.

5. If we let S = birds can swim, and A= birds are aquatic animals, then the argument form is the following:

If S, then A.

It is not the case that A.

It is not the case that S. Modus tollens. The argument is valid.

6. If we let F = bananas are fruit, P = bananas are plants, and U = bananas use photosynthesis, then the argument form is the following:

If F, then P.

If P, then U.

If F, then U. Hypothetical syllogism. The argument is valid.

7. If we let S = Mary stayed home from work, and G = her car is in the garage, then the argument form is the following:

If S, then G.

G.

S. Fallacy of affirming the consequent. The argument is invalid.

Since this is an invalid argument form, we can try to create a counterexample. We can make the letters “S” and “G” stand for any statements that we wish. All we need to do is create a scenario where both premises are true and the conclusion is false. Suppose that we make S = my mom ate an apple, and G = my mom ate a fruit. In addition, suppose that my mom actually ate an orange instead of an apple. Under these assumptions, the first premise would still be true (recall that the conditional statement does not assert that she ate an apple, it just asserts that if she ate an apple, then she ate a fruit). Since we assumed that she ate an orange, the second premise is also true. However, the conclusion is false because she did not eat an apple.

8. If we let R = animals have rights, and V = animals can vote, then the argument form is the following:

If R, then V.

It is not the case that R.

It is not the case that V. Fallacy of denying the antecedent. The argument is invalid.

Since this is an invalid argument form, we can try to create a counterexample. We can make the letters “R” and “V” stand for any statements that we wish. All we need to do is create a scenario where both premises are true and the conclusion is false. Suppose that we make R = my mom ate an apple, and V = my mom ate a fruit. In addition, suppose that my mom actually ate an orange instead of an apple. Under these assumptions, the first premise would still be true (recall that the conditional statement does not assert that she ate an apple, it just asserts that if she ate an apple, then she ate a fruit). Since we assumed that she ate an orange, the second premise is also true. However, the conclusion is false because she did eat a fruit.

9. If we let L = you are lost, and C = you are confused, then the argument form is the following:

L or C.

It is not the case that L.

C. Disjunctive syllogism. The argument is valid.

10. If we let S = Leo went swimming, and L = he is at the lake, then the argument form is the following:

If S, then L.

It is not the case that L.

It is not the case that S. Modus tollens. The argument is valid.

11. If we let B = your motorcycle is burning oil, W = it is wasting energy, and P = polluting the air, then the argument form is the following:

If B, then W.

If W, then P.

If B, then P. Hypothetical syllogism. The argument is valid.

12. If we let S = James Blythe is a secret agent, and G = he is licensed to carry a gun, then the argument form is the following:

If S, then G.

It is not the case that S.

It is not the case that G. Fallacy of denying the antecedent. The argument is invalid.

Since this is an invalid argument form, we can try to create a counterexample. We can make the letters “S” and “G” stand for any statements that we wish. All we need to do is create a scenario where both premises are true and the conclusion is false. Suppose that we make S = my mom ate an apple, and G = my mom ate a fruit. In addition, suppose that my mom actually ate an orange instead of an apple. Under these assumptions, the first premise would still be true (recall that the conditional statement does not assert that she ate an apple, it just asserts that if she ate an apple, then she ate a fruit). Since we assumed that she ate an orange, the second premise is also true. However, the conclusion is false because she did eat a fruit.

13. If we let S = I can save $1000, and C = I can buy a car, then the argument form is the following:

If S, then C.

S.

C. Modus ponens. The argument is valid.

14. If we let G = you graduated, and H = you got a high-paying job, then the argument form is the following:

If G, then H.

H.

G. Fallacy of affirming the consequent. The argument is invalid.

Since this is an invalid argument form, we can try to create a counterexample. We can make the letters “G” and “H” stand for any statements that we wish. All we need to do is create a scenario where both premises are true and the conclusion is false. Suppose that we make G = my mom ate an apple, and H = my mom ate a fruit. In addition, suppose that my mom actually ate an orange instead of an apple. Under these assumptions, the first premise would still be true (recall that the conditional statement does not assert that she ate an apple, it just asserts that if she ate an apple, then she ate a fruit). Since we assumed that she ate an orange, the second premise is also true. However, the conclusion is false because she did not eat an apple.

15. If we let C = you completed the coursework, and F = you failed the course, then the argument form is the following:

C or F.

It is not the case that C.

F. Disjunctive syllogism. The argument is valid.

Exercises 1G

I.

1. Strong. If we assume the premises are true, then the conclusion is probably true.

2. Weak. Since there are 11 possible ways to get an A (90-100), there is a 1/11 chance that you got a 98 (provided you got an A). If we assume the premises are true, then the conclusion is probably not true.

3. Strong. There are 10 remaining ways to get an A (98 is eliminated), and there are 89 other scores that are not an A. Therefore, there is an 89/99 chance that you did not get an A. If we assume the premises are true, then the conclusion is probably true.

4. Weak. The fact that it came up heads ten times in a row has no bearing on the next toss; each coin toss is an independent event, each having a 50-50 chance of heads or tails.

5. Weak. The fact that it came up heads ten times in a row has no bearing on the next toss; each coin toss is an independent event, each having a 50-50 chance of heads or tails.

6. Strong. If we assume the premises are true, then the conclusion is probably true.

7. Weak. If we assume the premises are true, then the conclusion is probably not true.

8. Strong. If we assume the premises are true, then the conclusion is probably true.

9. Strong. If we assume the premises are true, then the conclusion is probably true.

10. Strong. If we assume the premises are true, then the conclusion is probably true.

II.

1. Strengthens the argument. If the ceiling light works, then there is electricity available in the room.

2. Strengthens the argument. If the lamp is plugged in correctly, then electricity should be getting to the lamp.

3. Strengthens the argument. The outlet is working if the radio works, so electricity is available.

4. Weakens the argument. If the ceiling light does not work, then there may not be electricity available in the room.

5. Weakens the argument. If the lamp is not plugged in correctly, then electricity is probably not getting to the lamp.

6. Weakens the argument. The outlet may not be working if both the radio and lamp do not work.

7. Strengthens the argument. If the lamp works, then the light bulb was probably defective.

8. Weakens the argument. If you replace the light bulb and the lamp does not work, then the original bulb was probably not defective.

9. Strengthens the argument. If every other electrical fixture in the room works, then electricity is probably getting to the lamp.

10. Weakens the argument. If no electrical fixture in the room works, then the light bulb is probably not defective.

11. Strengthens the argument. Headlights draw their power from the battery; therefore, this new evidence strengthens the argument.

12. Weakens the argument. Headlights draw their power from the battery; therefore, we can determine that this new evidence weakens the argument.

13. Strengthens the argument. Since the battery is so old, it is likely to be defective or worn out; therefore, we can determine that this new evidence strengthens the argument.

14. Weakens the argument. Since the battery is fairly new, it is not likely to be defective or worn out; therefore, we can determine that this new evidence weakens the argument.

15. Weakens the argument. The horn draws its power from the battery; therefore, we can determine that this new evidence weakens the argument.

16. Strengthens the argument. The horn draws its power from the battery; therefore, we can determine that this new evidence strengthens the argument.

17. Weakens the argument. The loose terminal clamp is probably not relaying the battery power; therefore, we can determine that this new evidence weakens the argument.

18. Strengthens the argument. The tight terminal clamps are probably capable of relaying any battery power; therefore, we can determine that this new evidence strengthens the argument.

19. Strengthens the argument. The jump-starting draws power from another car’s battery; therefore, we can determine that this new evidence strengthens the argument.

20. Weakens the argument. The jump-starting draws power from another car’s battery; therefore, we can determine that this new evidence weakens the argument.