

NOTE: If you are having any issues seeing logic symbols in this Word document, select "Read" mode under the View menu in MS Word. PDF versions of the Instructor Manual are also available on the Instructor Companion Site.

Chapter 2

Exercise 2.1

Part II

1. In dog sled races the dogs are tortured.
Torturing animals is morally wrong.
Therefore, dog sled races are morally wrong.
2. The children of Somalia are starving and covered with flies.
Such a condition is extremely evil.
A God that is loving would want to eliminate this evil if he is aware of it.
A God that is ever-present is aware of this evil.
A God that is omnipotent has the power to eliminate this evil.
The evil in Somalia has not been eliminated by any God.
Therefore, there is no God that is loving, ever-present, and omnipotent.
3. The beliefs of the creationists are mistaken, ignorant, and superstitious.
No beliefs that are mistaken, ignorant, and superstitious should be taught in school.
Evolution is a scientific truth.
The beliefs of the creationists contradict evolution.
Parents have a right to have their children taught the truth.
The majority of parents favor the teaching of evolution.
Therefore, the beliefs of the creationists should not be taught in school.
4. Free ownership of guns is as noble as belief in God and intestinal fortitude.
Belief in God and intestinal fortitude made our country great and free.
Continued belief in God and intestinal fortitude are necessary to keep our country the way it is.
Free ownership of guns is no less important than God and intestinal fortitude.
Therefore, gun control is wrong.
5. All killers should pay for their crimes by spending many years in jail.
The insanity plea allows killers to spend as little as six months in a mental hospital and then be released.
The insanity plea allows killers to avoid what is coming to them.
Therefore, the insanity plea should be abolished.
6. Abortion and infanticide have produced a holocaust in our nation.
These practices have resulted in the death of millions of innocent children.
It is wrong to kill innocent children.
All of us should oppose what is wrong.

The Human Life Bill would outlaw abortion and infanticide.
Therefore, all of us should support the Human Life Bill.

7. The celebration of cultural diversity causes social fragmentation.
The celebration of cultural diversity is symptomatic of a split personality.
The people who set this country up framed one nation, indivisible.
The celebration of cultural diversity works against the intention of these people.
The celebration of cultural diversity erodes national identity.
Therefore, the celebration of cultural diversity is wrong.

8. A kind and loving God wants children to be happy, well-fed, cared for, and loved.
The pro-choice attitude insures that the children who are born will be happy, well-fed, cared for, and loved.
Therefore, God favors the pro-choice attitude.
and
The Catholic Church opposes pro-choice.
Whatever opposes pro-choice fosters famine and disease in Third World nations.
Anything that fosters famine and disease is wrong.
The policies of the Catholic Church are outdated.
Whatever is wrong and outdated should be changed.
Therefore, the Catholic Church should change its policy in favor of pro-choice.

9. Over thousands of years, organized religion has solved no social problems.
Organized religion has exacerbated social problems by promoting fear, superstition, and irrational mythologies.
Organized religion recommends that we solve these problems through prayer.
Prayer is a waste of time.
Prayer lulls the supplicant into inactivity.
Inactivity solves nothing.
Therefore, organized religion takes the wrong approach to solving social problems, and the correct approach is reality based, empirical, and rational.

10. Liberalism has excessively enlarged the welfare system.
Liberalism has made welfare recipients indolent and irresponsible.
The liberals refuse to acknowledge or correct the defects in this system.
Liberalism has made the criminal justice system too sensitive to the criminal and too insensitive to the victim of crime.
Liberalism has given more rights to the criminal than to the ordinary citizen.
Liberalism has promoted sex and violence in the school system.
Liberals have opposed prayer in the schools.
Therefore, liberalism is bad.

Part IV

1. Probably verbal (ambiguity). Does "sound" designate a subjective perception or an objective disturbance of the air (or some other medium)?
2. Factual and verbal (vagueness). What do we mean by "art"? Also, Barbara appears committed to the idea that there is a true and eternal essence of art that excludes such things as graffiti, whereas Vickie would probably deny this.
3. Factual. Did Kobe Bryant score 37 points or 34 points?
4. Probably verbal (ambiguity). By "violence" do we mean intentional hostility exerted by one human against another, or the operation of blind physical forces? Possibly a combination of verbal and factual. Is human violence caused by the operation of physical forces just as other physical events are?
5. Probably a combination of verbal (ambiguity) and factual. Does "death" mean the point at which the soul takes leave of the body, or the point at which life terminates? Also, Kathy appears to claim that an afterlife exists, whereas Anne appears to deny this.
6. Verbal (ambiguity). Does "education" refer to formal schooling only, or to schooling plus informal study?
7. Factual. Did Paul go to Knoxville or Nashville?
8. Verbal (ambiguity). Does "euthanasia" refer to passive measures to end life or active measures?
9. A combination of verbal (vagueness) and factual. What does "music" mean? Also, Cheryl claims that Metallica makes good sounds, whereas Oliver claims it does not.
10. Factual. When was the Battle of Trafalgar fought, and when did Nelson die?
11. Verbal (ambiguity). Eric thinks "metaphysics" refers to the study of magic and ghosts, while Leah is using the word in its more proper sense as designating the branch of philosophy that deals with ultimate questions of existence.
12. Probably a combination of verbal (ambiguity) and factual. Does "intelligence refer to IQ or to practical abilities? Also, Harold claims that Steinbeck's classes are worth taking, whereas Joyce appears to deny this.
13. Probably a combination of verbal (ambiguity and vagueness) and factual. First, does "freedom" mean the absence of external constraint only, or the absence of both internal and external constraint? Second, given the former, is it appropriate to punish the perpetrator of evil acts even though those acts might be internally compelled?

14. Factual in two ways. First, is the sun's volume greater or less than the earth's, and second, is gravity proportional to a body's mass or its volume? Of course, both disputants are mistaken about the comparative mass of the sun and earth.
15. Verbal (ambiguity). Does "three-piece" mean three instruments or three musical pieces?
16. Verbal (vagueness). How much must one earn to be overpaid?
17. Verbal (ambiguity). Brian is referring to a moral right, Elaine to a legal right.
18. Verbal (vagueness) and possibly factual. What is required for something to be called a food? Also, Penny considers marijuana to be relevantly similar to alcohol and coffee, whereas Sam does not.
19. Verbal (vagueness). When is someone considered to be poor?
20. Verbal (ambiguity). Does "performance enhancing" mean athletic performance or sexual performance?

Exercise 2.2

Part I

1. extortion - term
laborious - nonterm
cunningly - nonterm
practitioner - term
seriousness - term
forever - could be a term; e.g. "Forever is a long time."
whoever studies - term
interestingly impassive - nonterm
scarlet - term
reinvestment - term
therefore - nonterm
Thomas Jefferson - term
Empire State Building - term
annoy - nonterm
render satisfactory - nonterm
graceful dancer - term
wake up - nonterm
not only - nonterm
tallest man on the
squad - term
mountaintop - term
between - nonterm
since - nonterm

2. drum: round, loud
 politician: gregarious, double-talking, elected
 devil: crafty, evil, powerful
 wolf: carnivorous, four-legged, dangerous
 Mona Lisa: expensive, mysterious, hanging in the Louvre
 Statue of Liberty: made of copper, standing in New York harbor, given by France
 fanatic: narrow-minded, dogmatic, obsessed
 carrot: edible, crunchy, orange
 riot: destructive, irrational, uncontrollable
 piano: large, having eighty-eight keys, made of wood

3. newspaper: *Los Angeles Times*, *Chicago Tribune*, *Washington Post*
 scientist: Enrico Fermi, Paul Dirac, Werner Heisenberg
 manufacturer: Boeing, General Dynamics, Intel
 river: Rhine, Amazon, Volga
 opera: *Rigoletto*, *La Traviata*, *Aida*
 tallest mountain on earth: Everest
 prime number less than ten: two, three, five, seven
 Governor of New York: Eliot Spitzer
 language of Canada: English, French
 Scandinavian country: Sweden, Norway, Denmark, Finland, Iceland

- 4a. plant, tree, conifer, spruce, Sitka spruce
 b. vehicle, car, sports car, Italian sports car, Maserati
 c. person, professional person, doctor of medicine, surgeon, brain surgeon
 d. animal, mammal, marsupial, kangaroo, wallaby
 e. polygon, quadrilateral, parallelogram, rectangle, square

Part II

- | | |
|----------|----------|
| 1. False | 6. True |
| 2. True | 7. True |
| 3. True | 8. True |
| 4. False | 9. False |
| 5. False | 10. True |

Exercise 2.3

Part I

1. Precising
2. Persuasive
3. Stipulative
4. Lexical
5. Theoretical

6. Lexical
7. Persuasive
8. Precising
9. Stipulative
10. Theoretical
11. Precising
12. Theoretical
13. Stipulative
14. Persuasive
15. Lexical
16. Persuasive
17. Theoretical
18. Stipulative
19. Lexical
20. Precising
21. Theoretical
22. Precising
23. Persuasive
24. Lexical
25. Stipulative

Part II

2. Capital: (1) The seat of government of a state or nation; (2) The head of a column.
Depression: (1) A period of low economic activity; (2) Dejection or sadness.
4. Energy: A physical unit equal to the mass multiplied by the speed of light squared.
Atom: A fundamental unit of matter consisting of a nucleus composed of protons and neutrons and an outer shell of electrons.
5. Conservative: A responsible person interested in preserving the values of the past.
Conservative: A stodgy curmudgeon who is afraid of change.

Socialism: An enlightened form of government that ensures that the basic human needs of all the people are met.

Socialism: A depraved form of government that violates the God-given right to own property and dispose of it as one chooses.

Part III

- | | |
|----------|----------|
| 1. False | 6. True |
| 2. True | 7. False |
| 3. True | 8. False |
| 4. False | 9. True |

5. True 10. True

Exercise 2.4

Part I

- | | |
|--------------------------|--------------------------|
| 1. Subclass | 16. Etymological |
| 2. Genus and difference | 17. Synonymous |
| 3. Operational | 18. Genus and difference |
| 4. Enumerative | 19. Enumerative |
| 5. Etymological | 20. Demonstrative |
| 6. Synonymous | 21. Genus and difference |
| 7. Demonstrative | 22. Synonymous |
| 8. Enumerative | 23. Operational |
| 9. Subclass | 24. Enumerative |
| 10. Operational | 25. Subclass |
| 11. Etymological | 26. Synonymous |
| 12. Enumerative | 27. Etymological |
| 13. Genus and difference | 28. Genus and difference |
| 14. Operational | 29. Operational |
| 15. Subclass | 30. Subclass |

Part II

- 1a. "Skyscraper" means the Empire State Building, Chrysler Building, Willis Tower, etc.
Nonsynonymous term: "Buildings"
- b. Corporation: General Motors, Ford, Toyota (auto maker)
- c. Island: Oahu, Maui, Kauai (Hawaiian island)
- d. Composer: Bruckner, Mahler, Strauss (nineteenth century Austrian male)
- e. Novel: Jane Eyre, Wuthering Heights, Oliver Twist (motion picture)
- 2a. Ocean: Atlantic, Pacific, Indian, Arctic
- b. Continent: North America, South America, Europe, Africa, Australia, Asia, Antarctica
- 3a. "Animal" means a horse, bear, lion, and so on.
Nonsynonymous term: "Mammal"
- b. Fish: skipjack, yellow fin, albacore (tuna)

- c. Vehicle: Pontiac, Cadillac, Oldsmobile (automobile)
 - d. Gemstone: diamond, sapphire, ruby (very hard object)
 - e. Polygon: triangle, square, hexagon (figure)
- 4a. Quadrilateral: irregular quadrilateral, trapezoid, parallelogram, rectangle, square
- b. Circulating American coin: penny, nickel, dime, quarter, half dollar, dollar
- 5a. "Intersection" means crossing.
- b. Fabric: cloth
 - c. Nucleus: center
 - d. Abode: dwelling
 - e. Wedlock: marriage
 - f. Cellar: basement
 - g. Summit: top
 - h. Apparel: clothing
- 6a. A person is a "genius" if and only if that person can earn a score of 140 on an IQ test.
- b. A metal is "ferromagnetic" if and only if a magnet sticks to it when placed in contact with it.
 - c. A substance is "fluorescent" if and only if it glows when an ultraviolet light shines on it.
 - d. A solution is "alkaline" if and only if litmus paper turns blue when dipped into it.
 - e. Light is "polarized" if and only if its intensity changes when viewed through a piece of rotating Polaroid.
- 7a. "Drake" means a male duck.
- b. Biologist: A scientist who studies life
 - c. Felony: A very serious crime
 - d. Widow: A woman whose husband has died

- e. Library: A room or building for housing books
- 8a. Morphology: Derived from the Greek *morphe* (form) and *logos* (reason, speech, account). The morphology of something (such as an animal or plant) gives an account or explanation of the form or structure of that thing.
- b. Isomorphic: Derived from the Greek *isos* (equal, same) and *morphe* (form). Something is isomorphic to something else if it has the same form, shape, or structure.
 - c. Isotropic: Derived from the Greek *isos* (equal, same) and *tropos* (turn, way, manner). Something exhibits isotropic properties (such as the velocity of light) if it has the same value when measured in different directions. In other words, no matter which way you turn, the value is the same.
 - d. Phototropic: Derived from the Greek *phot-* from *phos* (light) and *tropos* (turn). Something (such as a plant) is phototropic if it turns toward the light.
 - e. Photography: Derived from the Greek *phot-* from *phos* (light) and *graphein* (to write). Photography is a process by which an image is produced by the action of light. In other words, the image is "written" by light.
 - f. Lithography: Derived from the Greek *lithos* (stone) and *graphein* (to write). Lithography is a printing process by which an image is transferred from an ink-embedded stone (or metal) plate to a piece of paper.
 - g. Lithology: Derived from the Greek *lithos* (stone) and *logos* (word, reason, speech, account). Lithology is the study of rocks. In other words, lithology gives an account or explanation of rocks.
 - h. Psychology: Derived from the Greek *psyche* (spirit, soul) and *logos* (word, reason, speech, account). Psychology is the study of the soul (mind) or of disorders that afflict the soul.

Part III

- | | |
|----------|----------|
| 1. False | 6. False |
| 2. True | 7. False |
| 3. False | 8. True |
| 4. False | 9. True |
| 5. True | 10. True |

Exercise 2.5

Part I

1. Too narrow: The definiens excludes images made of bronze, wood, plaster, etc.

2. Circular
3. No reference is made to the context.
4. Figurative
5. Improper grammar
6. Fails to state the essential meaning: No reference is made to the purpose of an iPhone.
7. Negative
8. Circular: What is an IQ test? A test that measures intelligence? Also too narrow?
9. Too broad: The definiens also includes overtures, concertos, incidental music, etc.
10. Affective terminology
11. Obscure
12. Ambiguous: What includes definitions? Is it logic or arguments?
13. Improper grammar
14. Too narrow: Houses can also be made of brick, etc.
15. Figurative language (contains a metaphor.)
16. Circular
17. Fails to indicate the context
18. Vague, possibly ambiguous
19. Vague
20. Negative
21. Figurative language (contains a metaphor.)
22. Improper grammar; vague; too broad: "Sailboat" also includes ketches, sloops, and yawls.
23. Affective terminology; perhaps also figurative language
24. Ambiguous: One player defeats another before who can remove whose men from the board?

25. Too broad: The definiens also denotes violins, violas, and string bass.
26. Affective terminology
27. Figurative language
28. Fails to state the essential meaning: The definition says nothing about the purpose of a clock, which is to tell the time. Also too narrow: the definiens excludes 24 hour clocks, digital clocks, and other clocks without numerals on their face.
29. Obscure
30. Too broad: The definiens also denotes salmon, tuna, swordfish, etc.
31. Affective terminology
32. Improper grammar
33. Negative, fails to convey the essential meaning
34. Too broad: The definiens also includes pencils, crayons, etc. Also too narrow: Pens can be used on material other than paper.
35. Too broad (brandy is also made from grapes) and too narrow (some wines are made from fruits other than grapes).