Chapter 1: Critical Thinking Basics

Exercise 1-1
1. An argument offers a reason or reasons for believing a claim is true. More technically, an argument consists of a conclusion and the premise or premises (the reason or reasons) said to support it.
4. False
7. All arguments have a conclusion, though the conclusion may not be explicitly stated.
10. It can be implied.
13. No
16. False
19. True
20. True

Exercise 1-3
1. Argument
4. No argument
7. No argument; Professor X is simply expressing an opinion. Saying that “there is good reason for increasing the class size” doesn’t actually introduce a reason.
8. Argument. Conclusion: The dentist’s billing practices are justified.
11. Consumer Reports seems to be suggesting that the watch may not really be water resistant, and giving a reason to support this suggestion. We’d call this an argument.

Exercise 1-4
1. No argument
4. Argument. Conclusion: Computers will never be able to converse intelligently through speech.
7. Argument. Conclusion: Fears that chemicals in teething rings and soft plastic toys may cause cancer may be justified.
10. No argument
13. No argument (Warren says that there are reasons for her conclusion, but she doesn’t tell us what they are.)
16. No argument
19. No argument

Exercise 1-5
1. a. The other three claims in the paragraph are offered as reasons for the claim that Hank ought not to take the math course.
3. d. Answers a and b are given as reasons for believing claim d; they are premises of an argument and claim d is the conclusion. (Claim c misstates the issue.)
4. c. The remainder of the passage provides examples of what is claimed in c. The claims in which these examples appear function as premises for c.
13. b. There is a lot of information in this passage, but answer (b) is certainly the main issue of the selection. The easiest way to see this is to notice that almost all of the claims made in the passage support this one. We’d put answer (c) in second place.
14. c. Answers (a) and (b) don’t capture the futility of the prison policy expressed in the passage; answer (d) goes beyond what is expressed in the passage.
15. b
16. b
20. c

Exercise 1-6
1. Whether police brutality happens very often
4. Whether there exists a world that is essentially independent of our minds
7. Whether a person who buys a computer should take some lessons
10. Whether Native Americans, as true conservationists, have something to teach readers about our relationship to the earth. There are other points made in the passage, but they are subsidiary to this one.

Exercise 1-7
1. There are two issues: whether they’re going on Standard Time the next weekend and whether they’ll need to set the clocks forward or back. Both speakers address both issues.
4. The issue is whether complaints about American intervention abroad are good or bad. Both speakers address this issue.

Exercise 1-8
1. Suburbanite misses Urbanite’s point. Urbanite addresses the effects of the requirement; Suburbanite addresses the issue of whether he and his neighbors can afford to comply with it.
3. On the surface, it may seem that both Hands address the issue of whether a person such as One Hand can feel safe in her own home. But it’s clear that One Hand’s real issue is whether the large number of handguns makes one unsafe in
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one's own home. Other Hand ignores this issue completely.
5. The issue for both parties is whether Fed-Up will be happier if he retires to Arkansas.

**Exercise 1-9**
The distinction used is between claims that address subjective issues and those that do not.
1. Not subjective
4. Subjective
7. Not subjective
10. Not subjective

**Exercise 1-10**
1. Not subjective
4. Not subjective
7. Not subjective. Although this is not possible to resolve as a practical matter, we can at least imagine circumstances under which we could test for life on any given planet.
10. Subjective
13. This is clearly a question about a moral value judgment. This one is very controversial, of course, and if there were an agreed-upon method of settling the issue, it would have long since ceased to be so controversial. But controversy as such does not mean that the question raises a purely subjective issue; on the contrary, the controversy in this case suggests that at least some of the moral issues raised are not subjective. They are certainly not seen as subjective by those who take sides in the controversy.

**Exercise 1-11**
The subjective claims are all but 2, 4, 6, 8.

**Exercise 1-12**
1. The house, a two-story colonial-style building, burned to the ground.

**Chapter 2: Clear Thinking, Critical Thinking, and Clear Writing**

**Exercise 2-1**
In order of decreasing vagueness:
1. (d), (e), (b), (c), (f), and (a). Compare (e) and (b). If Eli and Sarah made plans for the future, then they certainly discussed it. But just discussing it is more vague—they could do that with or without making plans.
4. (e), (d), (c), (a), (b)

**Exercise 2-2**
1. a
4. b
7. a. But it's close.
10. b
15. a

**Exercise 2-3**
1. Too vague. Sure, you can’t say exactly how much longer you want it cooked, but you can provide guidelines, for example, “Cook it until it isn’t pink.”
4. Not too vague.
7. Not too vague.
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Exercise 2-5

“Feeding” simply means “fertilizing” and is not too vague. “Frequently” is too vague. “No more than half” is not too vague. “Label-recommended amounts” is not too vague. “New year’s growth begins” and “each bloom period ends” are pretty vague for a novice gardener, but because pinpoint timing apparently isn’t crucial, the vagueness here is acceptable. “Similar” is too vague for a novice gardener. “Immediately after bloom” suggests that precise timing is important here, and we find the phrase too vague, at least for novices. “When the nights begin cooling off” is too vague even if precision in timing isn’t terribly important.

Exercise 2-6

1. Twenty percent more than what? (You might wonder what “real dairy butter” is, but it’s probably safe to assume that it’s just plain old butter.)
4. This is not too bad, but the word “desert” covers a lot of territory—not all deserts are like the Sahara. The comparison is okay, but don’t jump to the conclusion that today’s seniors are better students. Maybe the teachers are easier graders.
7. In the absence of absolute figures, this claim does not provide any information about how good attendance was (or about how brilliant the season was).

Exercise 2-7

4. Fine, but don’t infer that they both grade the same. Maybe Smith gives 10 percent A’s and 10 percent F’s, 20 percent B’s and 20 percent D’s, and 40 percent C’s, whereas Jones gives everyone a C. Who do you think is the more discriminating grader, given this breakdown?
7. Well, first of all, what is “long-distance”? Second, and more important, how is endurance measured? People do debate such issues, but the best way to begin a debate on this point would be by spells out what you mean by “requires more endurance.”
10. This is like a comparison of apples and oranges. How can the popularity of a movie be compared with the popularity of a song?

Exercise 2-8

1. The price-earnings ratio is a traditional (and reasonable) measure of a stock, and the figure is precise enough. Whether this is good enough reason to worry about the stock market is another matter; such a conclusion may not be supported by the price-earnings figure.
4. “Attend church regularly” is a bit vague, a person who goes to church each and every Christmas and Easter is a regular, although infrequent, attender. We don’t find “majority” too vague in this usage.
7. “contained more insights” is much too vague. The student needs to know more specifically what was the matter with his or her paper, or at least what was better about the roommate’s paper.
10. These two sorts of things are much too similar to be compared in this way. If you’re starving, the chicken looks better; if you need to get from here to there, it’s the Volkswagen. (This is the kind of question Moore likes to ask people. Nobody can figure out why.)

Exercise 2-10

1. The Raider tackle blocked the Giants linebacker.
4. How Therapy Can Help Victims of Torture
7. Susan’s nose resembles Hillary Clinton’s.
10. 6 Coyotes That Maul Girl Are Killed by Police
13. Second sentence: More than one disease can be carried and passed along to humans by a single tick.
16. We give to life good things.
19. Dunkelbrau—for those who crave the best-tasting real German beer
22. Jordan could write additional profound essays.
25. When she lay down to nap, she was disturbed by a noisy cow.
28. When Queen Elizabeth appeared before her troops, they all shouted “harrah.”
31. AT&T, for as long as your business lasts.
32. This class might have had a member of the opposite sex for a teacher.
33. Married 10 times before, woman gets 9 years in prison for killing her husband.

Exercise 2-11

1. As a group
4. As a group
7. It’s more likely that the claim refers to the Giants as a group, but it’s possible that it refers to the play of individuals.
10. As individuals
12. Probably as individuals
15. Ambiguous. If the claim means that people are living longer than they used to, the reference is to people as individuals. If the claim means that the human race is getting older, then the reference is to people as a group. If the claim expresses the truism that to live is to age, then the reference is to people as individuals.
Exercise 2-12
1. “Piano” is defined analytically.
4. “Red planet” is defined by synonym. (This one is tricky because it looks like a definition by example. But there is only one red planet, so the phrase refers to exactly the same object as the word “Mars.”)
8. “Chiaroscuro” is defined by synonym.
11. “Significant other” is defined by example—several of them.

Exercise 2-14
7, 6, 4, 1, 3, 2, 5

Exercise 2-15
1. Students should choose their majors with considerable care.
4. If a nurse can find nothing wrong with you in a preliminary examination, a physician will be recommended to you. However, in this city physicians wish to protect themselves by having you sign a waiver.

Exercise 2-16
In case you couldn’t figure it out, the friend is a woman.

Chapter 3: Credibility

Exercise 3-5
Something like number 9 is probably true, given the huge, almost unimaginable difference in wealth between the richest and the poorest people on the planet, but we have no idea what the actual numbers are. We’ve seen number 12 going around the Web, but we don’t know whether there’s anything to it and we’re not interested in conducting the appropriate experiments. We think the rest of these don’t have much of a chance (although there are conspiracy theorists who seem to believe number 10.)

Exercise 3-8
1. In terms of expertise, we’d list [d], [c], and [b] first. Given what we’ve got to go on, we wouldn’t assign expert status to either [a] or [e].
We’d list all entries as likely to be fairly unbiased except for [a], which we would expect to be very biased.
3. Expertise: [b] first, then [a], then [c] and [d] about equal, and [e] last. We’d figure that [b] is most likely to be unbiased, with [c], [d], and [e] close behind. Choker would be a distant last on this scale. Her bad showing on the bias scale more than makes up for her high showing on the expertise scale.

Exercise 3-9
1. The most credible choices are either the FDA or Consumer Reports, both of which investigate health claims of the sort in question with reasonable objectivity. The company that makes the product is the least credible source because it is the most likely to be biased. The owner of the health food store may be very knowledgeable regarding nutrition but is not a credible source regarding drugs. Your local pharmacist can reasonably be regarded as credible, but he or she may not have access to as much information as the FDA or CR.

2. It would probably be a mistake to consider any of the individuals on this list more expert than the others, although different kinds and different levels of bias are fairly predictable on the parts of the victim’s father, the NRA representative, and possibly the police chief. The senator might be expected to have access to more data that are relevant to the issue, but that would not in itself make his or her credibility much greater than that of the others. The problem here is that we are dealing with a value judgment that depends very heavily upon an individual’s point of view rather than his or her expertise. What is important to this question is less the credibility of the person who gives us an answer than the strength of the supporting argument, if any, that he or she provides.

3. Although problem 2 hinges on a value judgment, this one calls for an interpretation of the original intent of a constitutional amendment. Here our choices would be either the Supreme
Court justice or the constitutional historian, with a slight preference for the latter because Supreme Court justices are concerned more with constitutional issues as they have been interpreted by other courts than with original intent. The NRA representative is paid to speak for a certain point of view and would be the least credible in our view. The senator and the U.S. President would fall somewhere in between: Both might reasonably be expected to be knowledgeable about constitutional issues, but much less so than our first two choices.

**Exercise 3-10**
1. Professor Jensen would possess the greatest degree of credibility and authority on (d), (f), and (h), and, compared with someone who had not lived in both places, on (i).

**Exercise 3-12**
1. We’d accept this as probably true—but probably only approximately true. It’s difficult to be precise about such matters; Campbell will most likely lay off about 650 workers, including about 175 at its headquarters.

8. We’d accept this as likely.

12. No doubt cats that live indoors do tend to live longer than cats that are subject to the perils of outdoor life. If statistics on how much longer indoor cats live on the average were available, we’d expect the manufacturer to know them. But we suspect that such statistics would be difficult to establish (and probably not worth the effort), and we therefore have little confidence in the statistic cited here.

20. It’s quite possible, though the Defamer blog bills itself as “the Hollywood gossip sheet” (which suggests it trades in rumor and innuendo) and does not say whether the request, if it was really made, was granted. The Defamer may be fun, scurrilous reading, and may even get the information correct sometimes, but it’s not a reliable source.

**Chapter 4: Persuasion Through Rhetoric: Common Devices and Techniques**

**Exercise 4-1**
2. a
4. b
7. a
10. d
12. c
13. a
15 T

**Exercise 4-2**

**Exercise 4-3**

**Exercise 4-10**
1. The quotation marks downplay the quality of the school.
4. Persuasive definition
6. No rhetorical device present
8. “Gaming” is a euphemism for “gambling.”
11. “Clearly” is a proof surrogate; the final phrase is hyperbole.
14. “Luddites” [those opposed to technological progress] is a rhetorical analogy; the entire passage is designed to suggest that cable and satellite TV are near universal in acceptance and use and to characterize in a negative light those [few?] who haven’t become subscribers.

**Exercise 4-12**
1. “Japan, Inc.” is a dysphemism.
4. “Getting access” is a euphemism, and, in this context, so is “constituents.” We’ll bet it isn’t just any old constituent who gets the same kind of “access” as big campaign contributors.
7. The last sentence is hyperbolic.
10. (We really like this one.) “Even,” in the first sentence, is innuendo, insinuating that members of Congress are more difficult to embarrass than others. The remainder is another case of innuendo with a dash of downplaying. Although it’s a first-class example, it’s different from the usual ones. Mellinkoff makes you think that Congress merely passes a law in response to the situation. But stop and think for a moment: Aside from the odd congressional hearing or impeachment trial, all that Congress can do is pass laws! So Mellinkoff’s charge really should not be seen as belittling Congress at all.
13. “As you know” is a variety of proof surrogate. The remainder is a rhetorical analogy, in this case a comparison.
15. Proof surrogate. A claim that there are “two kinds of arguments” in favor of a multiverse does not actually provide those reasons.

18. Lots of them here! To begin, “orgy” is a dysphemism; “self-appointed” is a downplayer. The references to yurts and teepees is ridicule, and “grant-maintained” is a downplayer. The rest of it employs a heavy dose of sarcasm.

Chapter 5: More Rhetorical Devices: Psychological and Related Fallacies

Exercise 5-2
1. “Argument” from popularity
4. “Argument” from pity
7. Smokescreen/red herring, rather than provide support for the claim that the president’s plan for Social Security is “pretty good,” Republican changes the subject and accuses the Democrats of not even offering a plan.
10. “Argument” from outrage. There is also an example of straw man in the last sentence—we’ll meet straw man in Chapter 6.

12. Subjectivism
13. Rationalism (almost certainly)

Exercise 5-3
1. Not very.
3. Very relevant. A popular automobile may have continued support from its maker, and this can be advantageous to the owner of such a car.
7. It is a relevant consideration if you want to be polite or if you want to criticize the novel when you speak to your friend. But note that it would not be relevant if the issue had been whether the novel was well-written.
10. Relevant, especially if you have reason to think that Ebert likes or dislikes the same kinds of movies you do, or if you have opposite views (then you can avoid movies he recommends).

Exercise 5-5
1. Scare tactics
4. Apple polishing, with a touch of peer pressure
7. No fallacy
10. Smokescreen/red herring

Exercise 5-6
1. No fallacy
4. Peer pressure
7. Apple polishing
10. “Argument” from outrage

Exercise 5-7
1. Scare tactics
4. Scare tactics. Just how fallacious this passage is depends largely on one's assessment of how likely one is to be among the 250 who die from accidents on a given day. In any case, it is not an argument for buying this company's accident insurance.
7. Two wrongs make a right
8. Smokescreen/red herring
10. Smokescreen/red herring
14. “Argument” from common practice
17. The most obvious fallacy present here is the scare tactics we see from Rep. Welker. He is also guilty of a slippery slope fallacy, discussed in the next chapter. Under one interpretation of the situation, one might also find Rep. Paccione guilty of a red herring, since the original point of the news conference was whether there should be a constitutional amendment barring gays and lesbians from marrying and Rep. Paccione introduces a separate issue having to do with health care. But her claim—that as long as the health care issue remains unsolved it is not good policy to argue about other matters such as same-sex marriage—is relevant. Whether it’s true is another matter; argument would be necessary to establish that.

Chapter 6: Ad Hominem and More Fallacies

Exercise 6-2
1. Begging the question
4. Straw man
7. Straw man
10. Line-drawing fallacy (false dilemma)

Exercise 6-3
1. Inconsistency ad hominem
4. Inconsistency ad hominem
7. Circumstantial ad hominem
11. Personal attack ad hominem
Exercise 6-4
1. Circumstantial ad hominem
4. Straw man [Jeanne responds as if Carlos wanted to sleep until noon]. Can also be analyzed as false dilemma (“Either we get up right now, at 4:00 A.M., or we sleep until noon.”)
7. This begs the question. The conclusion merely restates the premise.
10. False dilemma
13. Misplaced burden of proof

Exercise 6-5
1. This is an example of burden of proof. Yes, it is indeed slightly different from the varieties explained in the text, and here’s what's going on. The speaker is requiring proof of a sort that cannot be obtained—actually seeing smoke cause a cancer. So he or she is guilty of one type of “inappropriate burden of proof.”
4. This is false dilemma because Sugarman’s alternatives are certainly not the only ones. Notice that he is giving no argument against the Chicago study; he is simply using the false dilemma to deny the study’s conclusion.
7. Inconsistency ad hominem
10. This is a case of misplaced burden of proof. The speaker maintains that the government is violating the law. The burden of proof therefore falls on the speaker to justify his or her opinion. Instead of doing that, he or she acts as if the fact that officials haven’t disproved the claim is proof that the claim is true.

Exercise 6-6
1. Assuming that the sheriff’s department has more than two officers, the speaker is misrepresenting her opponent’s position. Straw man.
4. Misplaced burden of proof
7. Perfectionist fallacy [false dilemma]
10. This is an ad hominem. It rides the border between personal attack and the circumstantial variety.

Exercise 6-7
1. Ad hominem: inconsistency. You hear this kind of thing a lot.
4. Ad hominem: personal attack
7. Slippery slope
10. Ad hominem: personal attack

Exercise 6-9
1. d
4. b
7. a
10. b

Exercise 6-10
1. c
9. This is a borderline circumstantial ad hominem. It certainly does not follow that Seltzer and Sterling are making false claims from the fact that they are being paid by an interested party. But remember the cautions from Chapter 3: Expertise can be bought, and we should be very cautious about accepting claims made by experts who are paid by someone who has a vested interest in the outcome of a controversy.

Chapter 7: The Anatomy and Varieties of Arguments

Exercise 7-1
1. a. Premise; b. Premise; c. Conclusion
2. a. Premise; b. Premise; c. Conclusion
3. a. Conclusion; b. Premise
4. a. Premise; b. Premise; c. Conclusion
5. a. Premise; b. Conclusion; c. Premise; d. Premise

Exercise 7-2
1. Premise: All Communists are Marxists.
   Conclusion: All Marxists are Communists.
4. Premise: That cat is used to dogs.
   Conclusion: Probably she won’t be upset if you bring home a new dog for a pet.
7. Premise: Presbyterians are not fundamentalists.
   Premise: All born-again Christians are fundamentalists.
   Conclusion: No born-again Christians are Presbyterians.
10. Premise: If we’ve got juice at the distributor, the coil isn’t defective.
    Premise: If the coil isn’t defective, then the problem is in the ignition switch.
    [Unstated premise: We’ve got juice at the distributor.]
    Conclusion: The problem is in the ignition switch.

Exercise 7-3
1. Conclusion: There is a difference in the octane ratings between the two grades of gasoline.
4. Conclusion: Scrub jays can be expected to be aggressive when they’re breeding.
7. Conclusion: Dogs are smarter than cats.
10. Unstated conclusion: She is not still interested in me.

Exercise 7-4
1. Separate arguments
3. Separate arguments
6. Separate arguments
9. Separate arguments
12. Separate arguments
15. Single argument with more than one premise

Exercise 7-5
1. Single argument with more than one premise
4. Single argument with more than one premise; one premise is unstated: What’s true for rats is probably true for humans.
8. Separate arguments
10. Separate arguments

Exercise 7-6
1. To explain
4. To explain
7. To explain
9. To argue

Exercise 7-7
3. Valid; true
6. False
9. False

Exercise 7-8
[Refer to Exercise 7-2]
1. Invalid
4. Invalid
7. Valid
10. Valid
[Refer to Exercise 7-3]
1. Invalid
4. Invalid
7. The unstated premise, “Being more easily trained is a sure sign of greater intelligence” would make the argument valid. An unstated premise such as “Being more easily trained is a good sign of greater intelligence” would make the argument fairly strong but invalid.
10. Valid

Exercise 7-9
1. Probably true, had “out of order” been written in pencil on the meter, we’d have a different opinion, since most of the meters in our town have those words scrawled on them.
5. Probably true; a restaurant that does a good job on these three different kinds of entrees will probably do a good job on the rest.
9. Probably true; it’s possible that the killer cleaned up very thoroughly, but it’s more likely that the body was brought from somewhere else.
12. True beyond a reasonable doubt; it may be that consumption will drop in the future or that dis-
covery of new reserves will increase, but as long as consumption at some level continues, eventually all the oil will be used up.

**Exercise 7-10**

1. Assumed premise: All well-mannered people had a good upbringing.
4. Assumed conclusion: He will not drive recklessly.
7. Assumed premise: All dogs that scratch a lot have fleas or dry skin.
10. Assumed premise: Every poet whose work appears in many Sierra Club publications is one of America’s outstanding poets.

**Exercise 7-11**

1. Assumed premise: Most people who are well-mannered had a good upbringing.
4. Assumed conclusion: He will drive safely.
7. Assumed premise: Most dogs that scratch a lot have fleas or dry skin. (Or: When this dog scratches a lot, he usually has either fleas or dry skin.)
10. Assumed premise: Most poets whose work appears in many Sierra Club publications are among America’s outstanding poets.

**Exercise 7-12**

1. Assumed premise: All stores that sell only genuine leather goods have high prices.
4. Assumed premise: No ornamental fruit trees bear edible fruit.
7. Assumed premise: No former professional wrestler could be a very effective governor.
10. Assumed premise: If population studies show that smoking causes lung cancer, then all smokers will get lung cancer.

**Exercise 7-13**

1. Assumed premise: Most stores that sell only genuine leather goods have high prices.
7. Assumed premise: Few people who were professional wrestlers could be very effective governors.
10. Assumed premise: If population studies show that smoking causes lung cancer, then most smokers will get lung cancer.

**Exercise 7-14**

1. 

**Exercise 7-15**

(See Exercise 7-2)

1. 1 All Communists are Marxists.
2. All Marxists are Communists.

4. 1 That cat is used to dogs.
2. She won’t be upset if you bring home a new dog for a pet.

7. 1 Presbyterians are not fundamentalists.
2. All born-again Christians are fundamentalists.
3. No born-again Christians are Presbyterians.

10. 1 If we’ve got juice at the distributor, the coil isn’t defective.
2. If the coil isn’t defective, then the problem is in the ignition switch.
3. The problem is in the ignition switch.

(See Exercise 7-3)

1. 1 The engine pings every time we use the regular unleaded gasoline.
2. The engine doesn’t ping when we use super.
3. There is a difference in octane ratings between the two.
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4. ① When blue jays are breeding, they become very aggressive. ② Scrub jays are very similar to blue jays. ③ Scrub jays can be expected to be aggressive when breeding. ④ Installing a solarium correctly can help you cool your house in the summer.

```
① + ②
↓
③
```

15. ① We must paint the house now. ② If we don’t, we’ll have to paint it next summer. ③ If we have to paint it next summer, we’ll have to cancel our trip. ④ It’s too late to cancel our trip.

```
② + ③ + ④
↓
①
```

(See Exercise 7-4)

6. ① You’re overwatering your lawn. ② There are mushrooms growing around the base of the tree. ③ Mushrooms are a sure sign of overwatering. ④ There are worms on the ground. ⑤ Worms come up when the earth is oversaturated. ⑥ [Unstated] The mayor should not support the Glen Royale subdivision.

```
② + ③ + ④ + ⑤
↓
①
```

8. ① The mayor now supports the initiative for the Glen Royale subdivision. ② Last year the mayor proclaimed strong opposition to further development in the river basin. ③ Glen Royale will add to congestion. ④ Glen Royale will add to pollution. ⑤ Glen Royale will make the lines longer at the grocery. ⑥ [Unstated] The mayor should not support the Glen Royale subdivision.

```
① + ② + ③ + ④ + ⑤
↓
⑥
```

9. ① If you drive too fast, you’re more likely to get a ticket. ② [If you drive too fast,] you’re also more likely to get into an accident. ③ You shouldn’t drive too fast. ④ [Unstated] The mayor should not support the Glen Royale subdivision.

```
① + ② + ③
↓
④
```

10. ① You should consider installing a solarium. ② Installing a solarium can get you a tax credit. ③ Installing a solarium can reduce your heating bill. ④ Jesse Brown is a good person for your opening in Accounting.

```
① + ② + ③ + ④
↓
⑥
```
Exercise 7-16

1. 1. Your distributor is the problem.
   2. There’s no current at the spark plugs.
   3. If there’s no current at the plugs, then either your alternator is shot or your distributor is defective.
   4. [Unstated] Either your alternator is shot or your distributor is defective.
   5. If the problem were in the alternator, then your dash warning light would be on.
   6. The light isn’t on.

   2 + 3

   4 + 5 + 6

   1

4. 1. They really ought to build a new airport.
   2. It [a new airport] would attract more business to the area.
   3. The old airport is overcrowded and dangerous.

   2

   3

   1

Note: Claim number 3 could be divided into two separate claims, one about overcrowding and one about danger. This would be important if the overcrowding were clearly offered as a reason for the danger.

Exercise 7-17

1. 1. Cottage cheese will help you to be slender.
   2. Cottage cheese will help you to be youthful.
   3. Cottage cheese will help you to be more beautiful.
   4. Enjoy cottage cheese often.

   1

   2

   3

   4

4. 1. The idea of a free press in America is a joke.
   2. The nation’s advertisers control the media.

   5

   4

   3

   2

   1
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13. ① About 100 million Americans are producing data on the Internet. . . . ② Each user is tracked so private information is available in electronic form. ③ One Web site . . . promises, for seven dollars, to scan . . . etc. ④ The combination of capitalism and technology poses a threat to our privacy.

16. ① Measure A is consistent with the City’s General Plan and city policies. . . . ② A “yes” vote will affirm the wisdom of well-planned, orderly growth. . . . ③ Measure A substantially reduces the amount of housing previously approved for Rancho Arroyo. ④ Measure A increases the number of parks and amount of open space. ⑤ Measure A significantly enlarges and enhances Bidwell Park. ⑥ Approval of Measure A will require dedication of 130.8 acres to Bidwell Park. ⑦ Approval of Measure A will require the developer to dedicate seven park sites. ⑧ Approval of Measure A will create 53 acres of landscaped corridors and greenways. ⑨ Approval of Measure A will preserve existing arroyos and protect sensitive plant habitats. . . . ⑩ Approval of Measure A will create junior high school and church sites. ⑪ Approval of Measure A will plan villages with 2,927 dwellings. ⑫ Approval of Measure A will provide onsite job opportunities and retail services. ⑬ [Unstated conclusion:] You should vote for Measure A.

20. ① Freedom means choice. ② This is a truth antiporn activists always forget when they argue for censorship. ③ In their fervor to impose their morality, groups like Enough Is Enough cite extreme examples of pornography, such as child porn, suggesting that they are available in video stores. ④ This is not the way it is. ⑤ Most of this material portrays, not actions such as this, but consensual sex between adults. ⑥ The logic used by Enough Is Enough is that if something can somehow hurt someone, it must be banned. ⑦ They don’t apply this logic to more harmful substances, such as alcohol or tobacco. ⑧ Women and children are more adversely affected by drunken driving and secondhand smoke than by pornography. ⑨ Few Americans would want to ban alcohol or tobacco even though they kill hundreds of thousands of people each year. ⑩ [Unstated conclusion] Enough Is Enough is inconsistent. ⑪ [Unstated conclusion] Enough Is Enough’s antiporn position is incorrect.
Chapter 8: Deductive Arguments I: Categorical Logic

Exercise 8-1
1. All salamanders are lizards.
4. All members of the suborder Ophidia are snakes.
7. All alligators are reptiles.
10. All places there are snakes are places there are frogs.
13. All people who got raises are vice presidents.
15. Some home movies are things that are as boring as dirt.
16. All people identical with Socrates are Greeks.
19. All examples of salt are things that preserve meat.

Exercise 8-2
1. No students who wrote poor exams are students who were admitted to the program.
4. Some first-basemen are right-handed people.
7. All passers are people who made at least 50 percent.
10. Some prior days are days like this day.
13. Some holidays are holidays that fall on Saturday.
16. All people who pass the course are people who pass this test. Or: No people who fail this test are people who pass the course.
19. All times they will let you enroll are times you’ve paid the fee.

Exercise 8-3
1. Translation: Some anniversaries are not happy occasions. [True]
   Corresponding A-claim: All anniversaries are happy occasions. [False]
   Corresponding E-claim: No anniversaries are happy occasions. (Undetermined)
   Corresponding I-claim: Some anniversaries are happy occasions. (Undetermined)
4. Translation: Some allergies are things that can kill you. [True]
   Corresponding A-claim: All allergies are things that can kill you. [False]
   Corresponding E-claim: No allergies are things that can kill you. [Undetermined]
   Corresponding O-claim: Some allergies are not things that can kill you. [Undetermined]

Exercise 8-4
1. No non-Christians are non-Sunnis. [Not equivalent]
4. Some Christians are not Kurds. [Not equivalent]
7. All Muslims are Shiites. [Not equivalent]
10. All Muslims are non-Christians. [Equivalent]

Exercise 8-5
1. Some students who scored well on the exam are not students who didn’t write poor essays. [Equivalent]
4. No students who were not admitted to the program are students who scored well on the exam. [Not equivalent]
7. All people whose automobile ownership is not restricted are people who don’t live in the dorms. [Equivalent]
10. All first basemen are people who aren’t right-handed. [Equivalent]

Exercise 8-6
2. All encyclopedias are nondefinitive works.
4. No sailboats are sloops.

Exercise 8-7
Translations of the lettered claims:
a. Some people who have been tested are not people who can give blood.
b. Some people who can give blood are not people who have been tested.
c. All people who can give blood are people who have been tested.
d. Logically equivalent to: “Some people who have been tested are people who cannot give blood” [converse]. Logically equivalent to: “Some people who have been tested are not people who can give blood” [obverse of the converse].
e. Logically equivalent to: “All people who have been tested are people who cannot give blood.” Logically equivalent to: “No people who have been tested are people who can give blood” [obverse].
2. Logically equivalent to: “All people who have not been tested are people who cannot give blood.” Logically equivalent to: “All people who can give blood are people who have been tested” [contraposition], which is equivalent to e.
3. Logically equivalent to: “No people who have been tested are people who can give blood,” which is equivalent to e.

Exercise 8-8
1. Obvert (a) to get “some Slavs are not Europeans.”
4. Obvert the conversion of (b) to get “Some members of the club are not people who took the exam.”
7. Contrapose (a) to get “All people who will not be allowed to perform are people who did not arrive late.” Translate (b) into “Some people who did not arrive late are people who will not be allowed to perform” and convert: “Some
people who will not be allowed to perform are people who did not arrive late."

10. Convert the obverse of (b) to get “No decks that will play digital tape are devices that are equipped for radical oversampling.”

Exercise 8-9

1. Invalid (this would require the conversion of an A-claim).
4. Valid (the converse of an I-claim is logically equivalent to the original claim).
7. Valid (the premise is the obverse of the conclusion).
10. The premise translates to "Some people in uniform are people not allowed to play." Thus (translating the conclusion) "Some people not allowed to play are people not in uniform" does not follow and the argument is invalid. But the subcontrary of the conclusion ("Some people not allowed to play are people in uniform"), does follow since this claim, and the premise, are the converse of each other and therefore logically equivalent.

Exercise 8-10

1. The converse of (a) is the contradictory of (b), so (b) is false.
3. The contrapositive of (a) is a true O-claim that corresponds to (b), and that means that (b), its contradictory, is false.
5. Contrapose (a) to get “Some unproductive factories are not plants not for automobiles.” Then obvert (b) to get “No unproductive factories are plants not for automobiles.” Because (a) is true, (b) is undetermined.
9. The translation of (a) is “Some people enrolled in the class are not people who will get a grade.” The obverse of the converse of (b) is “Some people enrolled in the class are not people who will get a grade.” Wow! They’re identical! So (b), too, is true.

Exercise 8-11

1. Valid:
   All P are G.
   No G are S.
   No S are P.

4. Invalid:
   All T-T are E.
   All T-T are E. [T = times Louis is tired, etc.]
   All T-T are T. [T-T = times identical with today]

Exercise 8-12

1. No blank disks are disks that contain data.
Some blank disks are formatted disks.
Some formatted disks are not disks that contain data.
Valid:

4. All tobacco products are substances damaging to people’s health.
Some tobacco products are addictive substances.
Some addictive substances are substances damaging to people’s health.
Valid:

7. All people who may vote are stockholders in the company.
No people identical with Mr. Hansen are people who may vote.
No people identical with Mr. Hansen are stockholders in the company.
Invalid:
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Note: Remember that claims with individuals as subject terms are treated as A- or E-claims.

10. After converting, then obverting the conclusion:
- No arguments with false premises are sound arguments.
- Some arguments with false premises are valid arguments.
- Some valid arguments are not sound arguments.

Valid:

![Diagram of valid, sound, and arguments with false premises]

**Exercise 8-13**

1. A
2. B

**Exercise 8-14**

1. a
2. b

**Exercise 8-15**

1. 0
2. 1

**Exercise 8-16**

1. c
2. c
3. b
4. e

**Exercise 8-17**

1. All T are F.
   Some F are Z.
   Some Z are T.
   Invalid; breaks rule 2
2. There are two versions of this item, depending on whether you take the first premise to say "no weightlifters use motor skills or only some don't." We'll do it both ways:
   - All A are M.
   - No W are M.
   - No W are A.
   - Valid
   - All A are M.
   - Some W are not M.
   - No W are A.
   - Invalid; breaks rule 3
3. Using I = people who lift papers from the Internet
   C = people who are cheating themselves
   L = people who lose in the long run
   All I are C.
   All C are L.
   All I are C.
   Valid

10. D = people who dance the whole night
    W = people who waste time
    G = people whose grades will suffer
    All D are W.
    All W are G.
    All D are G.
    Valid

**Exercise 8-18**

[Refer to Exercise 8-11 for these first four items.]

2. [Given in standard form in the text]
   Invalid: breaks rule 2

5. All voters are citizens.
   Some citizens are not residents.
   Some voters are not residents.
   Invalid: breaks rule 2

7. All halyards are lines that attach to sails.
   No painters are lines that attach to sails.
   No painters are halyards.
   Valid

8. All systems that can give unlimited storage are systems with removable disks.
   No standard hard disks are systems with removable disks.
   No standard hard disks are systems that can give unlimited storage.
   Valid

[Refer to Exercise 8-12 for the next four items.]

2. After obverting both premises, we get:
   No ears with white tassels are ripe ears.
   Some ripe ears are not ears with full-sized kernels.
   Some ears with full-sized kernels are not ears with white tassels.
   Invalid: breaks rule 1

5. After obverting the second premise:
   Some CD players are machines with 24x sampling.
   All machines with 24x sampling are machines that cost at least $100.
   Some CD players are machines that cost at least $100.
   Valid

7. All people who may vote are people with stock.
   No [people identical with Mr. Hansen] are people who may vote.
   No [people identical with Mr. Hansen] are people with stock.
   Invalid: breaks rule 3 (major term)

8. No off-road vehicles are vehicles allowed in the unimproved portion of the park.
   Some off-road vehicles are not four-wheel-drive vehicles.
   Some four-wheel-drive vehicles are allowed in the unimproved portion of the park.
   Invalid: breaks rule 1
**Exercise 8-19**

1. A = athletes; B = baseball players; C = basketball players
   Some A are not B.
   Some B are not C.
   Some A are not C.
   Invalid: breaks rule 1

3. T = worlds identical to this one; B = the best of all possible worlds; M = mosquito-containing worlds
   No B are M.
   All T are M.
   No T are B.
   Valid

6. P = plastic furniture; C = cheap furniture; L = their new lawn furniture
   All L are P.
   All P are C.
   All L are C.
   Valid

9. D = people on the district tax roll; C = citizens; E = eligible voters
   All D are C.
   All E are C.
   All D are E.
   Invalid: breaks rule 2

12. C = people identical to Cobweb; L = liberals; T = officials who like to raise taxes
    All C are L.
    All L are T.
    All C are T.
    Valid

17. P = poll results; U = unnewsworthy items; I = items receiving considerable attention from the networks
    All P are I.
    Some P are U.
    Some I are U.
    Valid

18. E = people who understand that the Earth goes around the Sun; W = people who understand what causes winter and summer; A = American adults
    All W are E.
    Some A are not E.
    Some A are not W.
    Valid

20. N = the pornographic novels of “Madame Toulouse”; W = works with sexual depictions patently offensive to community standards and with no serious literary, artistic, political, or scientific value; O = works that can be banned as obscene since 1973
    All O are W.
    All N are W.
    All N are O.
    Invalid: breaks rule 2

**Exercise 8-20**

1. True. A syllogism with neither an A- nor an E-premise would have (I) two I-premises, which would violate rule 2; or (II) two O-premises, which would violate rule 1; or (III) an I-premise and an O-premise. Alternative (III) would require a negative conclusion by rule 1, and a negative conclusion would require premises that distribute at least two terms, the middle term and [by rule 3] at least one other. Because an I-premise and an O-premise collectively distribute only one term, alternative (III) won’t work either.

4. True. An AIE syllogism whose middle term is the subject of the A-premise breaks exactly two rules. If the middle term is the predicate of the A-premise, this syllogism breaks three rules.

**Exercise 8-23**

1. L = ladybugs; A = aphid-eaters; G = good things to have in your garden
   All L are A.
   [All A are G.]
   All L are G.
   Valid

4. S = self-tapping screws; B = boons to the construction industry; P = things that make it possible to screw things together without drilling pilot holes
   All S are P.
   [All P are B.]
   All S are B.
   Valid

---

**Chapter 9: Deductive Arguments II: Truth-Functional Logic**

**Exercise 9-1**

1. Q → P
2. Q → P
3. P → Q
4. Q → P
5. (P → Q) & (Q → P)
6. Q → P
7. Q → P
8. Q → P
9. Q → P
10. Q → P
11. Q → P
12. Q → P
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192. Q → P
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194. Q → P
195. Q → P
196. Q → P
197. Q → P
198. Q → P
199. Q → P
200. Q → P

**Exercise 9-2**

1. (P → Q) & R
2. P → (Q & R)

Notice that the only difference between [1] and [2] is the location of the comma. But the symbolizations have two different truth tables, so moving the comma actually changes the mean-
ing of the claim. And we’ll bet you thought that commas were there only to tell you when to breathe when you read aloud.

5. \( P \to (Q \to R) \). Compare (5) with (3).

11. \( \neg C \to S \)

12. \( \neg(C \to S) \)

16. \( S \to \neg C \). Ordinarily, the word but indicates a conjunction, but in this case it is present only for emphasis—only if is the crucial truth-functional phrase.

20. \( \neg(F \vee S) \) or \( \neg(F \land S) \). Notice that when you “move the negation sign in,” you have to change the wedge to an ampersand (or vice versa). Don’t treat the negation sign as you would treat a minus sign in algebra class, or you’ll wind up in trouble.

**Exercise 9-3**

<table>
<thead>
<tr>
<th>( P )</th>
<th>( Q )</th>
<th>( R )</th>
<th>( P \to Q )</th>
<th>( P \to Q ) &amp; ( R )</th>
</tr>
</thead>
<tbody>
<tr>
<td>T</td>
<td>T</td>
<td>T</td>
<td>T</td>
<td>T</td>
</tr>
<tr>
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<td>T</td>
<td>F</td>
<td>F</td>
<td>T</td>
</tr>
<tr>
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<td>F</td>
<td>T</td>
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<td>F</td>
<td>F</td>
<td>T</td>
</tr>
</tbody>
</table>

5. \( P \) | \( Q \) | \( R \) | \( Q \to R \) | \( P \to (Q \to R) \)

| T | T | T | T |
| T | F | F | F |
| F | T | T | T |
| F | F | T | T |
| F | F | F | F |
| F | F | F | T |
| F | F | F | F |


**Exercise 9-5**

We’ve used the short truth-table method to demonstrate invalidity.

1. Valid. There is no row in the argument’s table that makes the premises all T and the conclusion F.

2. Invalid. There are two rows that make the premises T and the conclusion F. (Such rows are sometimes called “counterexamples” to the argument.) Here they are:

\[
\begin{array}{cccc}
L & W & S & P \\
T & F & F & F \\
T & T & F & F \\
\end{array}
\]

(Remember: You need to come up with only one of these rows to prove the argument invalid.)

3. Invalid. There are two rows that make the premises T and the conclusion F:

\[
\begin{array}{cccc}
M & P & R & F \\
T & T & F & F \\
T & T & F & T \\
\end{array}
\]

4. Invalid. There are three rows that make the premises true and the conclusion F:

\[
\begin{array}{cccc}
D & G & H & P \\
F & T & T & T \\
F & T & F & T \\
F & T & F & F \\
\end{array}
\]
5. Invalid. There are two rows that make the premises T and the conclusion F:

<table>
<thead>
<tr>
<th>R</th>
<th>S</th>
<th>B</th>
<th>T</th>
<th>E</th>
</tr>
</thead>
<tbody>
<tr>
<td>T</td>
<td>T</td>
<td>F</td>
<td>F</td>
<td></td>
</tr>
<tr>
<td>F</td>
<td>F</td>
<td>T</td>
<td>F</td>
<td>F</td>
</tr>
</tbody>
</table>

**Exercise 9-6**
1. Chain argument
2. Disjunctive argument
3. Constructive dilemma
4. Modus tollens
5. Destructive dilemma

**Exercise 9-7**
1. \( P \to R \) [Premise]
2. \( Q \to R \) [Premise] /.: \( P \to P \)
3. \( Q \to P \) 1, 2, CA
4. \( P \to Q \) [Premise]
5. \( P \to S \) [Premise]
6. \( -Q \) (premise) /.: \( S \)
7. \( -S \) [Premise]
8. \( P \land Q \to R \) [Premise]
9. \( P \to R \) 1, 2, CA
10. \( P \to Q \) 3, IMPL

**Exercise 9-8**
1. \( D \to B \)
2. \( D \to B \to B \)
3. \( B \to B \to B \)
4. \( B \to (B \to B) \)
5. \( B \to (B \to B) \)
6. \( B \to (B \to B) \)
7. \( B \to (B \to B) \)

**Exercise 9-9**
There is usually more than one way to do these.

1. \( P \land Q \) [Premise]
2. \( P \to R \) [Premise] /.: \( R \)
3. \( P \to R \) 1, SIM
4. \( R \) 2, 3, MP
5. \( R \to S \) [Premise]
6. \( -P \) 2, 5, MT

**Exercise 9-10**
1. \( P \to R \) [Premise]
2. \( R \to Q \) [Premise] /.: \( -P \to Q \)
3. \( P \to Q \) 1, 2, CA
4. \( P \to Q \) 3, IMPL
5. \( P \to Q \) [Premise]
6. \( R \to S \) [Premise] /.: \( S \)
7. \( P \to Q \) 3, SIM
8. \( P \to Q \) 4, DEM
9. \( P \to Q \) 5, 6, MT
10. \( P \to (R \to Q) \) [Premise]

**Exercise 9-11**
1. \( D \to B \)
2. \( D \to B \to B \)
3. \( B \to B \to B \)
4. \( B \to (B \to B) \)
5. \( B \to (B \to B) \)
6. \( B \to (B \to B) \)
7. \( B \to (B \to B) \)

**Exercise 9-12**
1. Equivalent to \( b \)
2. Equivalent to \( c \)
3. Equivalent to \( c \)
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Exercise 9-13

1. 1. P (Premise)
    2. Q & R (Premise)
    3. (Q & P) → S (Premise) / \(S\)
    4. Q 2, SIM
    5. Q & P 1,4, CONJ
    6. S 3,5, MP

4. 1. P
    √ Q (Premise)
    2. (Q √ U) → (P → T) (Premise)
    3. ~P (Premise)
    4. (~P √ R) → (Q √ S) (Premise) / \(T\)
    5. Q 1,3, DA
    6. Q √ U 5, ADD
    7. P → T 2,6, MP
    8. ~P √ R 3, ADD
    9. Q √ S 4,8, MP
    10. T 1,7,9, CD

7. 1. P √ (Q & R) (Premise)
    2. T → ~(P ∨ U) (Premise)
    3. S → (Q ∨ ~R) (Premise) / .:. S ∨ ~T
    4. S CP Premise
    5. Q → ~R 3,4, MP
    6. ~Q ∨ ~R 5, IMPL
    7. ~(Q & R) 6, DEM
    8. P 1,7, DA
    9. P ∨ U 8, ADD
    10. ~[P ∨ U] 9, DN
    11. ~T 2,10, MT
    12. S → ~T 4–11, CP
    13. ~S ∨ ~T 12, IMPL

Exercise 9-14

1. 1. P → Q (Premise)
    2. P → R (Premise) / .:. P → (Q & R)
    3. P CP Premise
    4. Q 1,3, CA
    5. R 2,3, MP
    6. Q & R 4,5, CONJ
    7. P → (Q & R) 3–6, CP

4. 1. P → (Q ∨ R) (Premise)
    2. T → (S & ~R) (Premise) / .:. [P & T] → Q
    3. P & T CP Premise
    4. P 3, SIM
    5. Q 4, SIM
    6. Q ∨ R 1,4, MP
    7. S & ~R 5,3, MP
    8. ~R 7, SIM
    9. Q 6,8, DA
    10. [P & T] → Q 3–9, CP

Exercise 9-15

1. C → ~S
   ~L → S
   C → ~L
   Valid

4. ~M ∨ C
   ~M → ~K
   C ∨ H
   T → ~H
   T → K
   Invalid

7. C ∨ S
   S → E
   R ∨ E
   Valid

10. C → ~L
    [E → ~(C → ~T)] & E
    L → ~T
    Valid

13. S → ~F
    ~S → ~T
    T
    Valid
Chapter 10: Inductive Arguments

Exercise 10-1
1. a. The two terms are “these shrubs” and “privet.” The target is “these shrubs” and the issue is whether they will keep their leaves in the winter.
   4. b
   7. a. The two terms are “your face” and “your hands.” The target is “your hands”; the issue is whether too much sun will make one’s hands wrinkly.
   10. b
   13. b
   16. b
   19. a. The two terms are “Yamaha motorcycles” and “Yamaha pianos.” The target is “Yamaha pianos” and the issue is whether Yamaha makes good pianos.

Exercise 10-2
1. b
4. a
7. a
10. b

Exercise 10-3
1. a
4. a
7. a
10. a

Exercise 10-5
1. “Tests in this class” is perfectly clear, “hard” (the property in question) is a little bit vague.
4. “Tolerant of stress” (the property in question) is vague.
7. Weather in Iowa is pretty vague, and so is “weather that sucks.”
10. Everything in this one is way too vague.
13. “Suspicious people” is pretty vague, and “quite unhappy” is, too.

Exercise 10-6
1. a
4. a
7. If there is a significant genetic component to the incidence of high blood pressure, its presence in Lupe’s sister and mother provides pretty good reason to think Lupe might have or develop high blood pressure, too.
9. d
12. c

Exercise 10-8
1. In order of increasing cautiousness, we’d say d, f, b, c, a.

Exercise 10-9
1. Insufficiently cautious
4. Overly cautious

Exercise 10-10
1. This argument is fairly strong; the conclusion exhibits a reasonable amount of caution.
4. This makes the argument weaker, a relevant difference between the previous rides and the target.
8. This makes the argument stronger. Since we don’t know the terrain of the target ride, a variety of terrain among the previous rides strengthens the argument.
10. If you considered the fact that bicycling is generally easier on flat land than on hilly land, you went beyond the criteria for inductive arguments in general. This is “specialized” knowledge and is part of a different argument: “This year’s ride will be on flat land, while previous rides were in hilly terrain. Bicycling is easier on flat land. Therefore, this year’s ride will be easier.”

Exercise 10-11
1. This supposition weakens the argument since it introduces a relevant difference between this year’s crop and the ones that went before.
4. This supposition weakens the argument since it introduces a relevant difference between this year’s crop and the ones that went before.
7. This supposition neither weakens nor strengthens the argument since a solar eclipse is not significant to the property in question (mildew ruining the artichoke crop).
10. This supposition weakens the argument since it introduces a relevant difference between this year’s crop and the ones that went before.

Exercise 10-12
1. The two suppositions weaken the argument.
4. The supposition strengthens the argument.

Exercise 10-13
1. The six students who turned in written evaluations
4. Generalization
6. No
8. It’s not very strong. The sample is small, and given that it’s not random it’s very likely to be
unrepresentative: The students who bothered to write have relatively strong feelings about Ludlum one way or the other, and there is no reason to think that the spread of their opinions reflects the spread among Ludlum’s students in general.

Exercise 10-14
1. No. If he bet that exactly 60 percent held the belief, he would be allowing for no error margin whatsoever. If he makes that bet, take him up on it.
4. 66 percent
7. With a sample of 100, he can safely bet that no more than 70 percent share that belief, because the error margin is now ±10 percent.

Exercise 10-15
Here we want to emphasize the importance of subject-matter knowledge in the analysis of analogical arguments and inductive arguments in general. There is no substitute for wide reading, diverse friendships, life experience, and self-reflection in the development of critical thinkers.

1. The terms of the analogy are Tiger Woods and the speaker’s child. The analogy is strong only if the speaker’s child has other features in common with Tiger Woods, such as great powers of concentration, great physical ability, and a proper temperament for golf. It’s unlikely that early lessons are as important as these traits.

4. The terms of the analogy are Senator Clinton’s performance as a senator and her potential performance as president. There is a great deal more exposure as president and a great number of constituencies to serve. Still, the similarities are significant. This conclusion gets more support from its premise than many in this exercise.
7. The terms of the analogy are Bush’s ratings in Georgia and his ratings in Massachusetts. Since the political scene in these two states is very different, and since they have voted very differently in recent elections, this is not a very good argument.
10. The terms of the analogy are Warren’s personal appearance and his care of the Barnes’s house. These terms are sufficiently dissimilar—especially as regards their motivations—as to make for a weak argument. It may be that Warren’s personal grooming will carry over to taking care of the house, but we suspect that many neat-appearing people live in messy abodes.

Exercise 10-16
1. Biased generalization
4. Hasty generalization; quite likely biased, too
8. Hasty generalization; biased, too
10. Biased generalization
13. “Refutation” by hasty generalization

Chapter 11: Causal Arguments

Exercise 11-1
1. Causal claim
4. Causal claim
7. Causal claim, although a very vague one
10. Causal claim
13. Causal claim
16. Not a causal claim

Exercise 11-2
1. Effect: cat is not eating; cause: cat is eating mice
4. Effect: the little guy’s not dehydrating; cause: giving him more water
7. Effect: that people cannot detect their own bad breath; cause: becoming used to the odor
10. Effect: a savings to the state in court expenses; cause: judges’ failure to process shoplifting, trespassing, and small-claims charges

Exercise 11-3
1. a
4. b
7. a
10. b
13. a
16. b
19. a

Exercise 11-4
1. C; mowing the grass results in both fumes and grass dust.
4. C; shorter days contribute to both.
7. C; getting older can result in both conditions.
10. B; maybe smarter people eat more fish.
13. B; if there is more violence, there is likely to be more on TV.
16. A
19. A; C is also possible, since good health may have contributed both to Uncle Ted’s attitude and to his longevity.
22. A; yes it could.
25. B; top executives can easily afford expensive clothes and nice cars.
**Exercise 11-5**

1. a
4. c
7. a
10. b
14. a
17. b
20. a

**Exercise 11-9**

1. There are three causal hypotheses mentioned: One is that drinking wine weekly or monthly may cause dementia; a second is that drinking wine daily probably does not prevent dementia; and the third is that regular beer drinking is probably a cause of dementia.

The study is cause-to-effect, but the study is largely nonexperimental because of the self-selection of the experimental group(s)—i.e., the drinkers—and the control group—the non-drinkers. Nothing is mentioned of the nature or size of either group. The description of the study is quite vague. Although the source of the study appears to be a legitimate authority, the account given here would lead us to want more details of the study before we’d give more than a very tentative acceptance of the results.

4. Causal claim: Sleeping in a room with a light until age two is a cause of nearsightedness in later years. The study is nonexperimental, cause-to-effect. No differences between the experimental groups [children who slept with lights on] and the control group [children who slept in darkness]. The differences in effect were 24 percent between night light and darkness, and 45 percent between a lamp and darkness. From what is reported, no problems can be identified.

Although the study is fairly small, the results indicate it is likely that there is a causal connection between the described cause and effect—a d of about 11 percent would be necessary in an experimental study; the higher numbers here help compensate for the nonexperimental nature of the study.

7. Causal claim: Exercise prevents colds. The study is a controlled cause-to-effect experiment, with one experimental group and two control groups. The first control group consists of ten non-exercising volunteers; the second consists of the experimental group prior to the jogging program.

The experimental group had 25 percent fewer colds than the first control group and some non-indicated percent fewer than the second control group. We don’t know enough about the groups and how they were chosen to tell if there are significant differences. Given the small size of the groups, a d of 40 percent is necessary to have statistical significance. The 25 percent figure is substantial and may indicate a causal connection, but it isn’t enough to convince us to take up jogging.

14. Causal claim: A behavior modification program aimed at Type A individuals prevents heart attacks. The study is a controlled cause-to-effect experiment. The experimental group consisted of 592 out of 862 predominantly male victims of heart attack; they were given group counseling to ease Type A behavior. The matched control group consisted of 270 subjects who received only cardiological advice.

After three years, 7 percent of the experimental group had another heart attack, compared with 13 percent of the control group. The finding is probably statistically significant given the size of the groups and the percentages involved. Details about the length of counseling are missing and they could be important because the report implies that continuation of the program was voluntary. Also, there seems to be confusion about what the investigators were researching—the relationship between the program and heart attack rate, between an actual behavioral modification and heart attack rate, between counseling and behavioral modification, or some combination or interplay of these. The conclusion the study supports is that Type A individuals who have had one heart attack can significantly reduce their chance of a second heart attack by participating (for some unspecified amount of time) in whatever kind of counseling program was conducted in the experiment.

**Exercise 11-11**

Our evaluations:
1. A, A, A
6. F, C, F
10. B, C, A

**Exercise 11-12**

1. This explanation is full of problems. It is untestable; its relevance is questionable (we couldn’t have predicted blue eyes from a previous incarnation unless we knew more about the incarnation, but the explanation is too vague to enable us to do that); it contains unnecessary assumptions; and it conflicts with well-established theory about how we get our eye color.

4. Reasonable explanation
7. Poor explanation, circular
10. Poor explanation; untestable (given the fact that subconscious desires are allowed); excessively vague; questionable relevance; conflicts with well-established theory

13. Reasonable explanation
17. Before we accepted this explanation of violence we’d want to consider alternatives: poverty, hopelessness, and discrimination, to name a few. Rap music and TV/movie violence may be reflections of violence rather than causes.
20. This poor explanation is untestable, unreliable, and extremely vague. The nondevout might add that it requires unnecessary assumptions.

Exercise 11-15
1. Explanation
4. Explanation
7. Explanation
10. Explanation used to justify or excuse behavior

Exercise 11-16
1. Explanation
4. Explanation
5. Explanation used to excuse

Exercise 11-17
Of the first three items, numbers 2 and 3 use explanations to help justify an action (or omission, in the case of 3). Item 1 does not justify any behavior.

Exercise 11-19
1. This is just an explanation of how the garage got this cluttered.
4. This is an argument that Parker is giving a test today.
8. Host gives an explanation of why he can’t shave. The explanation is intended to serve as a justification.
10. The speaker is explaining why this is a great movie, and in doing so is arguing that it is a great movie.

Exercise 11-20
1. There is no argument present.
4. This is an explanation that might be used to justify the Rotary’s behavior, but given the behavior in question, there is certainly no need to justify it.
7. Explanation used in an argument to justify making the 445 pages of report public.
10. This is an explanation that could easily and mistakenly be taken as an attempt to justify a molester’s behavior.

Chapter 12: Moral, Legal, and Aesthetic Reasoning

Exercise 12-1
1. Value judgment
4. Value judgment
7. Value judgment
10. Not a value judgment

Exercise 12-2
1. Not a value judgment, although it surely hints at one.
4. Value judgment
7. Not a value judgment in the ordinary sense, but since rides are often evaluated by degree of scariness, this may imply such a judgment.

Exercise 12-3
1. Not a moral value judgment
4. Moral value judgment
7. Not a moral value judgment
10. Moral value judgment

Exercise 12-4
2. People ought to keep their promises.
5. A mayor who takes bribes should resign.
7. Anyone who commits a third felony should automatically go to prison for twenty-five years.
8. Whatever is unnatural is wrong and should be avoided.

Exercise 12-5
1. Tory is being consistent in that what he is proposing for both sexes is that members of both should have the right to marry members of the other sex.
2. To avoid inconsistency, Shelley must be able to identify characteristics of art and music students, athletes, and children of alumni—for whom she believes the special admissions program is acceptable—and show that, aside from women and minority students who happen also to be in one of the listed categories, such students do not have these characteristics.
Furthermore, the characteristics she identifies must be relevant to the issue of whether an individual should be admitted into the university. It may well be possible to identify the characteristics called for. (Remember that consistency is a necessary condition for a correct position, but not a sufficient one.)

3. Marin could be consistent only if he could show that the process of abortion involves killing and capital punishment does not. Because this is impossible—capital punishment clearly does involve killing—he is inconsistent. However, Marin’s inconsistency is the result of his blanket claim that all killing is wrong. He could make a consistent case if he were to maintain only that the killing of innocent people is wrong, and that abortion involves killing innocent people but capital punishment does not. There is another approach: Marin could argue that only state-mandated killing (which would include capital punishment but not abortion) is permissible. (Each of these last claims would require strong arguments.)

8. To avoid inconsistency, Harold would have to identify a relevant difference between the discrimination law and the marijuana law. In fact, there is one fairly obvious one to which he can appeal: The former has been declared contrary to the state constitution; the latter has not been alleged to be contrary to any constitution. So Harold may object to the failure to implement the latter even if it does conflict with federal drug laws—after all, if the law has not been found unconstitutional, shouldn’t the will of the voters prevail? (It is a separate matter, of course, whether he can build a strong argument in the case of the marijuana law.)

Exercise 12-9
1. The harm principle: Shoplifting harms those from whom one steals.
2. The harm principle: Forgery tends to harm others.
4. We think the offense principle is the most relevant, because the practice in question is found highly offensive by most people (at least we believe—and hope—so). But one might also include the harm principle, because spitting in public can spread disease-causing organisms.
6. Legal moralism, because many people find adultery immoral; and, to a lesser extent, both the harm principle and legal paternalism, because adultery can increase the spread of sexually transmitted diseases.
10. The offense principle

Exercise 12-12
1. a. Principle 4  
   b. Principle 2  
   Compatible
4. a. Principle 5  
   b. Principle 2  
   Compatible

Exercise 12-13
1. Relevant on Principle 7  
4. Relevant on Principle 1
7. Relevant on Principle 3

Exercise 12-14
Principle 1: June’s picture does not teach us anything, for no chimp can distinguish between truth and falsity, it is a curiosity rather than a work of art.
Principle 2: By looking at June’s very symbolic paintings, we are compelled to accept her vision of a world in which discourse is by sight rather than by sound.
Principle 3: Perhaps the most far-reaching impact of June’s art is its revelation of the horrors of encaging chimps; surely beings who can reach these heights of sublimely abstract expression should not see the world through iron bars.
Principle 4: Dear Zookeeper: Please encourage June to keep painting, as the vibrant colors and intense brushstrokes of her canvases fill all of us with delight.
Principle 5: I never thought I would wish to feel like a monkey, but June’s art made me appreciate how chimps enjoy perceiving us humans as chumps.
Principle 6: This is not art, for no monkey’s product can convey the highest, most valuable, human states of mind.
Principle 7: Whether by the hand of monkey or man, that the canvases attributed to June show lovely shapes and colors is indisputable.
Principle 8: What is art is simply what pleases a person’s taste, and June obviously finds painting tasty, as she tends to eat the paint.

Exercise 12-15
1. a  
4. b  
7. b