



## EXERCISES

Exercises marked with \* have answers in “Answers to Exercises” (Appendix A).

### Exercise 3.1

1. What is a deductive argument?
2. What is an inductive argument?
3. Are inductive arguments truth preserving? Why or why not?
- \*4. The terms *valid* and *invalid* apply to what types of arguments?
5. What kind of guarantee does a deductive argument provide when it is valid?
6. Can an inductive argument guarantee the truth of the conclusion if the premises are true? Why or why not?
7. What is the difference between an inductively strong argument and an inductively weak one?
- \*8. What is the term for valid arguments that have true premises?
9. What is the term for strong arguments that have true premises?
10. Can a valid argument have false premises and a false conclusion? False premises and a true conclusion?
11. What logical conclusion can you draw about an argument that is valid but has a false conclusion?
- \*12. Is it possible for a valid argument to have true premises and a false conclusion?
13. In what way are conclusions of deductive arguments absolute?

### Exercise 3.2

For each of the following arguments, follow the four-step procedure to determine whether it is deductive or inductive, valid or invalid, and strong or weak. Indicate the results of applying each step.

#### EXAMPLE 1

Colonel Mustard did not commit the murder. Someone who had committed the murder would have dirt on his shoes and blood on his hands. Colonel Mustard has neither.

**Step 1:** Conclusion: Colonel Mustard did not commit the murder. Premises: Someone who had committed the murder would have dirt on his shoes and blood on his hands. Colonel Mustard has neither.

**Step 2:** Deductively valid.

**Step 3:** Does not apply.

**Step 4:** Does not apply.

**EXAMPLE 2**

Ninety-five percent of people who smoke pot are irresponsible and forgetful. Looks like you smoke pot all the time. Ergo, you're irresponsible and forgetful. Can you remember that?

**Step 1:** Conclusion: Ergo, you're irresponsible and forgetful. Premises: Ninety-five percent of people who smoke pot are irresponsible and forgetful. Looks like you smoke pot all the time.

**Step 2:** Not deductively valid.

**Step 3:** Inductively strong.

**Step 4:** Does not apply.


1. Either Jack is lying or he is not. If his ears turn red, he's lying. If they don't turn red, he's telling the truth. His ears are red. Jack is lying.
- \*2. Ethel graduated from Yale. If she graduated from Yale, she probably has a superior intellect. She has a superior intellect.
3. If you go to that party, you're completely nuts. You're going to the party. It necessarily follows that you're nuts.
4. "Good sense is of all things in the world the most equally distributed, for everybody thinks himself so abundantly provided with it, that even those most difficult to please in all other matters do not commonly desire more of it than they already possess." [René Descartes, *A Discourse on Method*]
5. All philosophers are absent-minded. All philosophers are teachers. It necessarily follows that all absent-minded people are teachers.
- \*6. Every musician has had special training, and everyone with special training has a college degree. Thus, every musician has a college degree.
7. People with high IQs also have psychic abilities. People with high SAT scores—which are comparable to high IQ scores—also probably have psychic abilities.
8. If Elvis Presley's name is spelled wrong on his tombstone, there must be some kind of conspiracy surrounding the death of the King. His name is spelled wrong. Therefore, there's a conspiracy.
- \*9. Some actors sing, and some play a musical instrument. So some actors who sing also play a musical instrument.
10. Anyone who is not a bigot will agree that Chris is a good fellow. Some people in this neighborhood think that he's anything but a good fellow. Some people in this neighborhood are bigots.
11. "In the actual living of life there is no logic, for life is superior to logic." [Daisetz Teitaro Suzuki, *Essays in Zen Buddhism*]
12. A vase was found broken on the floor; some money had been taken out of the safe; and there were strange scratches on the wall. It therefore follows that someone obviously burglarized the place.

13. All the evidence in this trial suggests that Lizzy Borden is guilty of murder. Let's face it: She's probably guilty.
14. If everything was all right, there would be no blood on the floor. Of course, there is plenty of blood on the floor. Therefore, everything is not all right.
- \*15. If minds are identical to brains—that is, if one's mind is nothing but a brain—androids could never have minds because they wouldn't have brains. Clearly, a mind is nothing but a brain, so it's impossible for androids to have minds.
16. "From infancy, almost, the average girl is told that marriage is her ultimate goal; therefore her training and education must be directed towards that end." [Emma Goldman, "Marriage and Love"]
17. If you have scratches on your body that you can't account for, and you feel that you have been visited by space aliens, then you really have been visited by space aliens. You have such scratches, and you have experienced such feelings. Doubtless you have been visited by space aliens.
18. If bombs are falling on London, war has started. The bombs are falling now. War has begun.

### Exercise 3.3

For each of the following arguments, indicate whether it is valid or invalid, strong or weak.

1. Joe says that the food in the restaurant is first-rate. So it's first-rate.
2. Social welfare is by definition a handout to people who have not worked for it. But giving people money that they have not earned through labor is not helping anyone. It follows then that social welfare does not help anyone.
- \*3. If CNN reports that war has started in Syria, then war has started in Syria. CNN has reported exactly that. War must have started.
4. If  $r = 12$ , then  $s = 8$ ;  $r = 12$ ; therefore,  $s = 8$ .
5. Any sitcom that tries to imitate *The Big Bang Theory* is probably a piece of trash. All of this season's sitcoms try to ape *The Big Bang Theory*. They've gotta be trash.
6. "Poetry is finer and more philosophical than history; for poetry expresses the universal and history only the particular." [Aristotle, *Poetics*]
7. Either you're lying or you're not telling the whole story. You're obviously not lying, so you're just relating part of the story.
- \*8. Either your thinking is logical or it is emotional. It's obviously not logical. It's emotional.
9. It is unwise to touch that electrical wire. It might be hot.
10. A recent Gallup poll says that 80 percent of Americans believe in the existence of heaven, but only 40 percent say they believe in hell. People are just too willing to engage in wishful thinking.

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11. Many young black men have been shot dead by white police officers. Black people have often been harassed by white policemen. From these facts we can conclude that the recent tragic shooting in Chicago of a black teen by a white police officer was a case of first-degree murder.
  12. “We say that a person behaves in a given way because he possesses a philosophy, but we infer the philosophy from the behavior and therefore cannot use it in any satisfactory way as an explanation, at least until it is in turn explained.” [B. F. Skinner, *Beyond Freedom and Dignity*]
  13. You flunked the last three tests. You didn’t show up for the last eight classes. And you haven’t written any of the essays. Looks like you don’t know the material.
  - \*14. Bachelors are unmarried. George is a bachelor. He has never taken a wife.
  15. Bachelors are unmarried, and George acts like he’s not married. He’s a bachelor for sure.
  16. If Alicia is alone on a trip, she will be afraid. She’s alone on the latest trip. She is afraid.
  17. If the universe had a beginning, then it was caused to begin. We know that the universe did have a beginning in the form of the Big Bang. So it was caused to come into existence. If it was caused to come into existence, that cause must have been God. God caused the universe to come into existence.
  - \*18. If the United States is willing to wage war in the Middle East, it can only be because it wants the oil supplies in the region. Obviously the United States is willing to go to war there. The United States wants that oil.
  19. “Someone must have been telling lies about Joseph K., for without having done anything wrong he was arrested one fine morning.” [Franz Kafka, *The Trial*]
  20. Anyone willing to take the lives of innocent people for a cause is a terrorist. Many Christians, Jews, and Muslims have taken innocent lives in the name of their religious cause. Many Christians, Jews, and Muslims have been terrorists.
  21. If he comes back, it’s probably because he wants money. There he is. He wants money.
  22. If you’re eighteen, you’re eligible to vote. But you’re only seventeen. You’re not eligible to vote.
  - \*23. I like geometry. My geometry teacher likes me. Therefore, I will pass my geometry course with flying colors.

### Exercise 3.4

1. For each of the following arguments, identify the implicit premises that will make the argument valid.

**EXAMPLE**

*The engine is sputtering. It must be out of gas.*

Implicit premise: Whenever the engine sputters, it's out of gas.

- \*1. Any senator who is caught misusing campaign funds should resign his seat. Senator Greed should resign.
  2. Jenna is a highly motivated runner, so she is sure to finish the race.
  3. In the first week at the box office, the movie grossed over \$30 million. So it's sure to win at least one Oscar.
  4. The FBI doesn't have a very serious focus on stopping terrorism. Another major terrorist attack will happen in this country.
  - \*5. The author of the book on interventionist wars is either biased or incompetent as a journalist. So she's biased.
  6. The conflict in Indonesia is a genuine war. So it can't possibly be morally justified.
  7. The Taliban regime fell because it persecuted women.
  8. The US government should limit its activities to the Western Hemisphere because it doesn't have the resources to cover the whole world.
  - \*9. If the engine starts right away, it's because of the tune-up I gave it. Must be because of the tune-up I gave it.
  10. Taslima did not criticize US military action in the Gulf War or in the war in Afghanistan. She must be a hawk.
- ii. To each of the following arguments, change or add a premise that will make the argument strong.
1. The Republicans are more articulate about their policies and more realistic about world events than the Democrats are. They will surely win the next election.
  2. Aziz regularly eats at McDonald's, so Aziz is likely to gain a few pounds.
  - \*3. Six out of ten of my teenage friends love rap music. So 60 percent of all teens love rap music.
  4. Seventy-one percent of the faculty and staff at Goddard Community College are Democrats. So most of the students are probably Democrats.
  5. Miriam was in the library when the books were stolen from the librarian's desk. She was also seen hanging around the desk. So she's probably the one who stole them.
  - \*6. If Assad's fingerprints are on the vase, then he's probably the one who broke it. He's probably the one who broke it.
  7. If the president needs more money to balance the federal budget, he will get it from Social Security. Well, he's almost certainly going to get it from Social Security.

8. Ninety percent of students at Boston College graduate with a B.A. degree. Li Fong will probably graduate from Boston College with a B.A. degree.
- \*9. The murder rates in most large American cities on the East Coast are very high. The murder rates in most large cities in the West and Midwest are very high. So the murder rate in New Orleans must be very high.
10. John has a typical American diet. His fat intake is probably excessively high.



## Self-Assessment Quiz

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Answers appear in “Answers to Self-Assessment Quizzes” in Appendix B.

1. What is a deductive argument? an inductive argument?
2. What is a valid argument? an invalid one? What is a strong inductive argument?
3. What is a sound argument?

Indicate whether the following arguments are deductive or inductive.

4. If you refuse to surrender, then you will be arrested. You refuse to surrender. Prepare yourself: You will be arrested.
5. There’s an 80 percent chance that the hurricane will veer northward tomorrow and hit Tampa. So Tampa will probably feel the force of the hurricane tomorrow.
6. Ethel is reckless. She is going to have an accident sooner or later.
7. Whatever Hillary Clinton says is true. She says that the Republicans are weak. So the Republicans are weak.

In each of the following arguments, identify the implicit premise that will make the argument either valid or strong.

8. Jones has never openly criticized any military action against any Middle Eastern nation. He is a warmonger.
9. Maria failed her driving test three times. She’s probably not paying attention.
10. If 60 percent of people believe in astrology or tarot cards, the future of the country does not look bright. Grades in college science courses will probably drop dramatically.

For each of the following exercises, provide an example of the argument pattern indicated.

11. If the job is worth doing, then it's worth doing well. The job is worth doing. Therefore, it's worth doing well.
12. If Austin is happy, then Barb is happy. Barb is not happy. Therefore, Austin is not happy.
13. If Einstein invented the steam engine, then he's a great scientist. Einstein did not invent the steam engine. Therefore, he is not a great scientist.
14. If Buffalo is the capital of New York, then Buffalo is in New York. Buffalo is in New York. Therefore, Buffalo is the capital of New York.

Identify the conclusion in the following arguments.

15. Cole is up to no good. He's been acting suspiciously for days, and he told Rachel that he was going to steal something valuable.
16. The sitcom *Orange Is the New Black* is becoming really lame. The writing is predictable and plodding. The acting is worse than ever.
17. If dolphins have minds comparable to ours, then these creatures are self-conscious, intelligent, and creative. If they are self-conscious, then they should react appropriately when they see their reflections in a mirror. They do react appropriately. If they're intelligent, they should be able to solve complex problems. They can solve such problems. If they're creative, they should be able to create some form of art. In a rudimentary way, they do create art. They are definitely self-conscious, intelligent, and creative.
18. If the dictum to always tell the truth in all circumstances is a valid moral principle, then it should fit well with our considered moral judgments. But it does not fit well with our considered moral judgments because there are times when lying is actually the right thing to do, as when we lie to save a life. So the dictum to always tell the truth is not a valid moral principle.
19. I don't think that I should vote for any independent candidate in the next election. Independents never win, and I want the person I vote for to win. Also, independents have a tendency to be a little wacky. And we definitely don't need any more wacky politicians in power.
20. Creationism is an inadequate theory about the origins of life. It conflicts with science, and it is incapable of predicting any new facts.



## Writing Assignments

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1. Select an issue from the following list and write a three-page paper defending a claim pertaining to the issue. Follow the procedures discussed in chapter 12 for outlining the essay and identifying a thesis.
  - Should the US government be permitted to kill American citizens overseas who have been identified as terrorists?
  - Should the federal government allow parents to withhold lifesaving medical care from their children on religious grounds?
  - Does pornography lead to violence against women?
  - Should the police or other security officers be permitted to use racial profiling to prevent terrorist attacks?
  - Should doctor-assisted suicide be legalized in all fifty states?
2. Find a 150- to 200-word passage purporting to present an argument for a particular view but actually being devoid of arguments. Look in magazines or newspaper letters to the editor or advocacy or political websites. Then rewrite the passage and include an argument for the original view.
3. Visit a website intended to support a particular view on a social or political issue. Using the information on the website, write a 100-word passage containing an argument for a view that the website might endorse.