

Model Responses to Selected Exercises with Commentary

Model responses to all odd-numbered exercises in the Exercise Sets of Part 1 appear below. Both strong and weak model responses are given for some exercises. Many responses are followed by commentary that explains the particular strengths and/or weaknesses of the response. For most of the exercises in this book, there will be more than one good response. The responses below are offered only as guides to help you understand what a good response to the exercises looks like.

MODEL RESPONSES FOR CHAPTER I: SHORT ARGUMENTS

Exercise Set 1.1: Distinguishing premises from conclusions

Model Response for Exercise 1

[Racial segregation reduces some persons to the status of things.]
Hence, segregation is morally wrong.

The main clue in this argument is the word "Hence," which is a conclusion indicator. Since "Hence" introduces the clause "segregation is morally wrong," that clause is likely to be the conclusion. Furthermore, it makes more sense to see "Racial segregation reduces some persons to the status of things" as a reason for thinking that segregation is morally wrong, rather than the other way around.

Note that the word "Hence" is not underlined in the response. Conclusion indicators point you to the conclusion, but they are not part of the conclusion itself.

Model Response for Exercise 3

Most people experience no side effects from the yellow fever vaccine.
People with egg allergies shouldn't get the yellow fever vaccine, though,
because [some part of the vaccine is grown inside eggs.]

In this argument, the premise and conclusion are part of a single sentence. The premise indicator because is your clue that the last clause is the premise and the first clause is your conclusion. Because is a special indicator word in this respect. It usually comes in between the conclusion and a premise. Thus, it helps you identify both the conclusion and a premise. Note that the first sentence is just background information. It is neither a premise nor a conclusion. You don't need to bracket it or underline it.

Model Response for Exercise 5

Positron-emission tomography, better known as PET, is a method for examining a person's brain. Before undergoing PET, the patient inhales a gas containing radioactive molecules. The molecules are not dangerous for the patient because [they break down within a few minutes, before they can do any damage.]

The argument in this passage comes in the last sentence. Once again, the conclusion and premise are joined together with because. And again, the first two sentences are just giving you background information; they tell you what positron-emission tomography is and what kind of molecules the argument is about.

Model Response for Exercise 7

Some people buy college degrees on the internet because they're trying to pretend that they went to college. That's a waste of money, since [it's easy to make a college degree on your computer,] and [a degree that you make yourself is just as good as a degree that you bought on the internet.]

The only genuine indicator word in this argument is the premise indicator since. That's your clue that you're about to see a premise. If you were still having trouble identifying the conclusion after you've found those premises, ask yourself which of the remaining sentences the premises would be good reasons for. In this case, it makes sense to take the premises as reasons to think that buying college degrees online is a waste of money. It doesn't make sense to take the premises as reasons to think that people do buy college degrees online. Thus, we can mark "That's a waste of money" as the conclusion of the argument.

Notice that we have marked the last two clauses as separate premises. You could also have marked everything after "since" as one long premise, but in

general, it's better to treat each independent clause as its own premise. (Remember: An independent clause is a clause that could be a complete sentence on its own. For instance, "it's easy to make a college degree on your computer" is an independent clause, whereas "a degree that you make yourself" is not.)

The first sentence is background information. It is neither a premise nor the conclusion of the argument. So why does it have a "because" in it? Remember that not every instance of "because," "since," or other common premise indicators is actually an indicator word. In this case, "because" connects a piece of background information to an explanation of that information. An explanation differs from an argument in that an argument gives you a reason to think that something is true, whereas an explanation merely helps you understand why or how something is true.

Model Response for Exercise 9

In the film Interstellar, the main characters travel through a "wormhole," which is a tunnel through space-time that would enable space travelers to zip from one part of the universe to another. In theory, wormholes are possible, but it's probably impossible to use wormholes to travel around the universe. [Keeping wormholes open long enough to travel through them would require enormous amounts of "negative energy."] and [it's probably impossible to generate that much negative energy.]

Many people who are new to analyzing arguments have trouble with arguments like this. For starters, there are no indicator words. In order to identify the conclusion and the premises, you have to ask yourself what the author's main point is. One way to do this is to ask yourself which clause(s) or sentence(s) provide a reason to believe which other independent clause(s) or sentence(s). In this case, it makes most sense to interpret the author as using the last sentence to give us reasons to think that it's probably impossible to use wormholes to travel around the universe.

A further question is whether to mark the last sentence as a single premise or as two separate premises joined by and. In most cases, this won't matter too much, but a safe rule of thumb is to divide things into two separate premises when they make two separate claims. The last sentence here makes two separate claims—one about what's required to keep a wormhole open and one about whether it's possible to meet that requirement. That's why we've marked them as two separate premises.

Exercise Set 1.2: Outlining arguments in premise-and-conclusion form**Model Response for Exercise 1**

(1) LeBron James will eventually surpass Michael Jordan in MVP awards, All-Star appearances, total points scored, and many other records.

(2) It is quite possible that James will even win as many championships as Jordan did.

(3) So far, Jordan is the greatest basketball player ever.

Therefore, (4) LeBron James will eventually become the greatest player of all time.

The word therefore is a conclusion indicator. It's one way to see that the conclusion of this argument is that James will eventually become the greatest basketball player of all time. All of the other sentences in this passage make sense as reasons for that conclusion, so you should include each of them as premises in the argument.

Notice that this premise-and-conclusion outline of the argument does not merely copy the entire sentence verbatim from the passage. It changes the sentences slightly so that each sentence stands on its own: For instance, compare the second sentence of the passage to premise (2) in the response. If you saw only the original sentence, outside of the context of the passage, you might not know that it was about James. The outline overcomes this problem by replacing "He" with "James." In general, it's helpful to replace pronouns with proper names when outlining arguments.

Model Response for Exercise 3

(1) A team of researchers led by Brendan Nyhan of Dartmouth gave some parents information from the Centers for Disease Control and Prevention stating that there is no evidence that vaccines cause autism.

(2) The team gave other parents no information about vaccine safety.

(3) When compared to parents who received no information, parents who received the information were no more likely to vaccinate their children.

Therefore, (4) simply providing information about vaccine safety does not increase the proportion of parents who get their children vaccinated.

This exercise gives a simple example of scientific reasoning. Accounts of scientific reasoning are often presented as stories about what a group of scientists have done, but you can usually reconstruct the scientists' reasoning from the story. In this case, the story starts with an explanation of the scientists' hypothesis—that is, the idea they wanted to test. They wanted to test the idea that giving parents information about vaccine safety would increase the proportion of parents who vaccinate their children. The word concluded in the last sentence tells you that you're about to read the conclusion of the researchers' reasoning: In this case, the conclusion is that their hypothesis was false—that providing information about vaccine safety does not make parents more likely to vaccinate their children.

Notice that the reasons given for this conclusion don't just consist of observations the researchers collected. The researchers did an experiment: They gave information only to some parents, and then they compared the behavior of those parents to the behavior of parents who did not receive that information. Scientific reasoning often works this way. You start with a hypothesis, and then you do an experiment to generate exactly the kinds of observations you need to test your hypothesis, and then you reason from your observations to a conclusion.

Model Response for Exercise 5

(1) In 1908, something flattened eight hundred square miles of forest in a part of Siberia called Tunguska.

(2) Scientists discovered that a lake in the area has the shape of an impact crater that would have been created by an asteroid or comet.

Therefore, (3) the Tunguska event was caused by an asteroid or comet.

The fact that there are other popular theories about what caused the "Tunguska event" might make us more skeptical about the conclusion of this argument. Since they are not reasons for that conclusion, though, we do not include them when outlining this argument in premise-and-conclusion form.

Note that, like the previous exercise, this argument illustrates the scientific method in action. Since there are numerous competing hypotheses about the cause of the Tunguska event, scientists try to find ways to test those different hypotheses. Developing and testing multiple hypotheses is an important part of doing good science. Drawing conclusions from those tests requires careful reasoning.

Model Response for Exercise 7

(1) People behave much more cautiously when they know that their life is on the line.

Therefore, (2) People would drive much more cautiously if there were a spear mounted on the steering wheel of every car.

(3) We should do everything we can to encourage cautious driving.

Therefore, (4) all cars should have a spear mounted on the steering wheel, aimed directly at the driver's chest.

This argument contains a subargument—that is, an argument within an argument. Premise (1) is a reason for (2), and (2) is a reason for the main conclusion. Thus, we call (2) a subconclusion. We indicate that (2) follows from (1) by writing “Therefore” before (2). (For more on subarguments and subconclusions, see page 271 in Appendix III.)

Just because this argument seems ridiculous (but is it really?) doesn't mean that we can't put it in premise-and-conclusion form. Putting an argument in premise-and-conclusion form is a very different task from figuring out whether it is a good argument.

Model Response for Exercise 9

(1) It is possible for someone to wonder whether her life is meaningful even if she knows that she has enjoyed her life.

Therefore, (2) a meaningful life is not the same as an enjoyable life.

(3) Someone who is alienated from her life or feels like her life is pointless, even if she is doing things that might seem worthwhile from an objective perspective, is not leading a meaningful life.

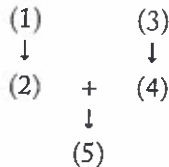
Therefore, (4) a meaningful life is not the same as a life spent on objectively worthwhile projects.

Therefore, (5) neither enjoyment nor objectively worthwhile projects, each considered separately from the other, are sufficient for a meaningful life.

Like the argument in exercise 7 of this set, this argument contains subarguments. Premise (1) is a reason for premise (2) and premise (3) is a reason for premise (4). Premises (2) and (4), taken together, are reasons for the main conclusion, (5).

A more precise and visually appealing way to represent the structure of arguments is to literally draw a picture of them, creating what is

sometimes called an argument map. In this case, we can represent the relation between these various premises and their subconclusions and final conclusion like this:



We introduce argument maps in Appendix III (p. 268). You won't need them to do the other exercises in this book, but studying argument mapping may help you understand and construct more complex arguments.