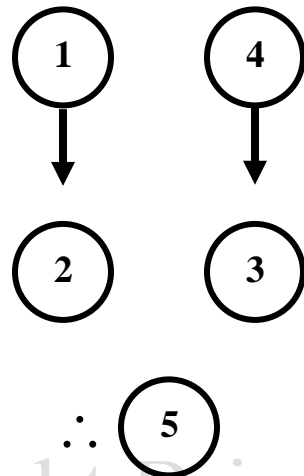


1.6.1. Argument Mapping Problems

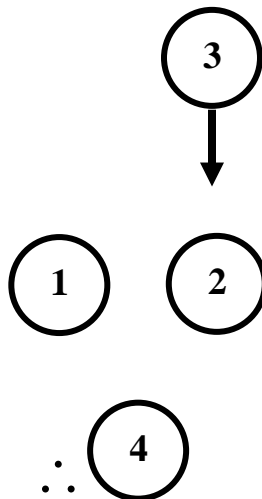
A. For each of the following *partial argument maps*, state which sentences are currently **useless**; then use the No Useless Sentence Principle to **finish the map**.

1.



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2.



B. For each of the following argument ‘outlines,’ construct an **argument map**.

1. (1), since (2). And (3) means that (4). Furthermore, (5). So (6).
2. (1). And the reasons are clear: because (2), (3). And (4), since (5).
3. (1)? Well, in light of (2), it’s clear that (3). But (4) means that (5). And (3) and (5) together show that (1).

C. Construct an **argument map** for each of the following English chain arguments (making sure to give different numbers to the different parts of a combo sentence).

1. Can students skip Logic class without harming their chances of leading successful, fulfilling lives? Consider the facts: over the last five years, 90% of the students who skipped more than four classes in Logic ended up unemployed, 80% wound up strung out on drugs, and 20% died. And we know other factors weren’t to blame, since each of those students did fine in their other courses. Clearly, skipping Logic is a nearly fool-proof way of ruining your entire life.
2. Ace and Rex are fighting, so we can’t invite both of them to dinner on Sunday. And since Barbie won’t want to come without Rex, we’d better not invite Ace.
3. The thief was no automotive expert, as shown by the botched attempt to hotwire the car, and the use of a crowbar to open the door. So, since all the members of the Penny Lane Royals have extensive automotive skills, it’s safe to conclude that the thief wasn’t a member of their crew.

4. “That every body continues in its state either of rest or of moving uniformly in a right line, unless so far as it is compelled to change that state by external force, is a law of Nature universally received by all philosophers. But it follows from this that bodies which move in curved lines, and are... continually bent from the right lines that are tangents to their orbits, are retained in their curvilinear paths by some force acting. Since, then, the planets move in curvilinear orbits, there must be some force operating, by the incessant actions of which they are continually made to deflect from the tangents.”

– Roger Cotes, Preface to the Second Edition of Isaac Newton’s **Principia Mathematica** (1713), p. xxii.

5. “New truths... are the resultants of new experiences and of old truths combined and mutually modifying one another. And since this is the case in changes of opinion to-day, there is no reason to assume that it has not been so at all times. It follows that very ancient modes of thought may have survived through all the later changes in men’s opinions.”

– William James, **Pragmatism** (1907) Lecture V

6. Nora won’t go on the rafting expedition on Saturday unless Nick does. But Nick is leaving town on Friday to go to the concert, so he can’t be there. And since Kitty will only participate if either Nora or Dr. Slim goes with her, we can see that Kitty won’t go on the rafting expedition unless Dr. Slim goes too.

7. Is Rex sticking with his New Year’s resolution to exercise every day? Well, from the fact that his apartment is littered with empty beer cans and full ashtrays, we can see that he’s still drinking and smoking as much as ever. But someone who drinks and smokes that much wouldn’t have the energy, or the willpower, to stick to an exercise regimen.

(Question: what’s unusual about this argument?)

8. Suki and Neko both want fish, but there's only enough fish for one; so if Jack doesn't find some more fish, Suki and Neko will have a fight. Now, if they have a fight, you can bet there'll be a lot of screaming and shouting, and the neighbors will end up calling the cops. And if the cops come, Suki will get in big trouble over that "three strikes" law. So if Jack doesn't find some more fish, Suki's going to jail.

9. "Adding B to **S4** gives **S5**; [so] since **S4** is weaker than **S5**, it follows that B is not in **S4**, and hence that **S4** does not contain the system **B**. Nor does **B** contain **S4** since there are reflexive and symmetric frames that are not transitive. So **B** and **S4** are independent systems...."

– Max Cresswell, "Modal Logic"; in Lou Goble, ed., **The Blackwell Guide to Philosophical Logic** (Blackwell: 2001), p. 142

10. "His graphological proof... was no proof at all for, the manuscripts being copies..., Rimbaud could have written the poems at any previous date."

– Louise Varese, translator's introduction to Arthur Rimbaud, **Illuminations** (Revised Edition, New Directions Books: 1957), p. xv

11. "Because the point A is the center of the circle BCD, AC is equal to AB. And because the point B is the center of the circle ACE, CB is equal to AB. But since AC is equal to AB, and AB is equal to CB, it follows that AC, AB, and CB are all equal."

– Euclid, **Elements**, Book I, Proposition 1.

12. "Rays of light can cross without interfering with each other, but streams of particles could not avoid interfering. Moreover, light spreads out through an immense sphere around a source.... Light, then, cannot be corpuscular. Since light is a mechanical phenomenon, it must be motion transmitted through a medium."

– Richard S. Westfall, *describing Huygens' arguments for the wave theory of light, in **The Construction of Science: Mechanisms and Mechanics** (1971: Cambridge University Press)*

13. “We may... say that a miracle is an event of which the causes cannot be explained by the natural reason through a reference to ascertained workings of nature; but since miracles were wrought according to the understanding of the masses, who are wholly ignorant of the workings of nature, it is certain that the ancients took for a miracle whatever they could not explain by the method adopted by the unlearned in such cases, namely, an appeal to the memory, a recalling of something similar, which is ordinarily regarded without wonder; for most people think they sufficiently understand a thing when they have ceased to wonder at it. The ancients, then, and indeed most men up to the present day, had no other criterion for a miracle; hence we cannot doubt that many things are narrated in Scripture as miracles of which the causes could easily be explained by reference to ascertained workings of nature.”

– Benedict de Spinoza, **A Theologico-Political Treatise** (1670), translated by R.H.M Elwes (1891), Chapter VI.

14. “We are conscious *a priori* of the complete identity of the self in respect of all representations which can ever belong to our knowledge, as being a necessary condition of the possibility of all representations. For in me they can represent something only in so far as they belong with all others to one consciousness, and therefore must be at least capable of being so connected. ... This synthetic unity presupposes or includes a synthesis, and if the [synthetic unity] is to be *a priori* necessary, the synthesis must also be *a priori*. ... But only the productive synthesis of the imagination can take place *a priori*.... Thus the principle of the necessary unity of pure (productive) imagination, prior to apperception, is the ground of the possibility of all knowledge....”

– Immanuel Kant, **Critique of Pure Reason** (1781), A116-118; translated by Paul Guyer and Allen Wood (Cambridge University Press: 1992)