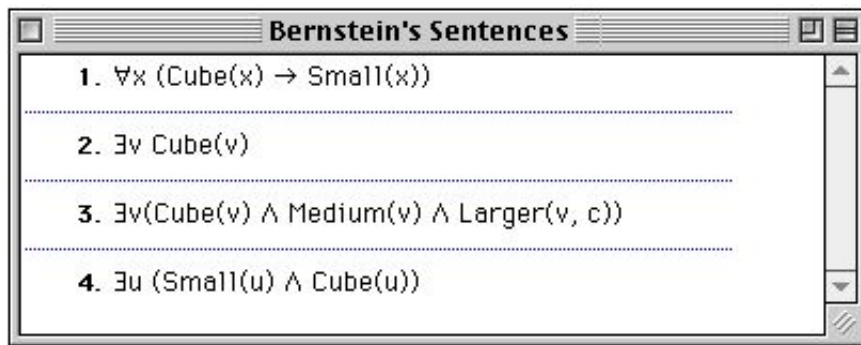


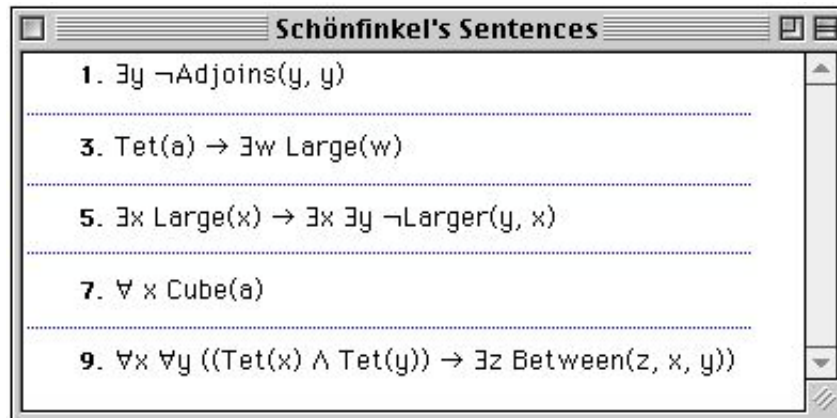
## Chapter 9: Hints and Selected Solutions

### Section 9.3 (page 234)

9.1 The first four sentences:



9.2 Here is one possible way of fixing up the odd numbered sentences:

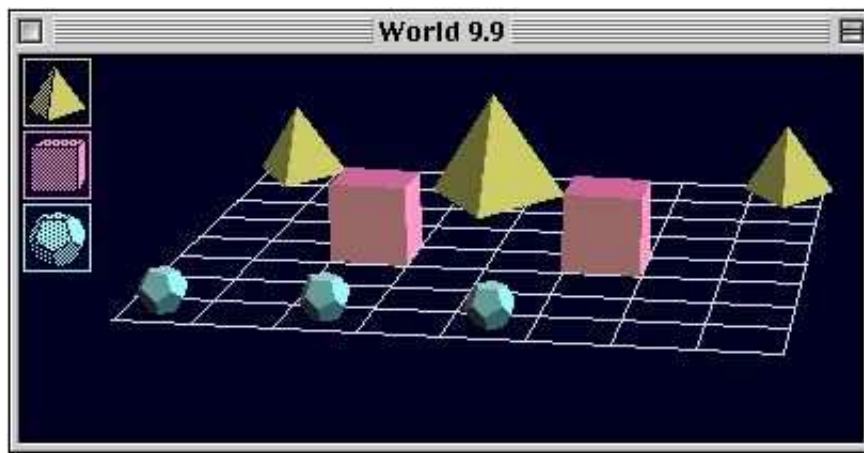


### Section 9.4 (page 238)

- 9.7 According to the formation rules, quantifiers can combine with variables, not with names. *b* is a name, not a variable, so cannot be used with a quantifier.

### Section 9.5 (page 241)

- 9.9 Here is one of many worlds that make all of Aristotle's Sentences true. You should use a different world. You could build one with just four blocks.



- 9.12
1.  $\forall x(\text{Tet}(x) \rightarrow \text{Small}(x))$
  4.  $\exists x(\text{Dodec}(x) \wedge \text{Large}(x))$
  7.  $\exists x(\text{Dodec}(x) \wedge \neg \text{Small}(x))$
  10.  $\forall y(\text{Cube}(y) \rightarrow \neg \text{Large}(y))$

### Section 9.6 (page 247)

- 9.16
1.  $\exists x \text{Large}(x)$
  4.  $\exists x(\text{Cube}(x) \wedge \text{Large}(x))$
  7.  $\exists x(\text{Cube}(x) \wedge \text{Large}(x) \wedge \text{LeftOf}(x, b))$
  10.  $\exists x(\text{Cube}(x) \wedge \text{Large}(x) \wedge \text{LeftOf}(x, b) \wedge \text{BackOf}(x, c))$
  13.  $\exists x \neg(\text{Large}(x) \wedge \text{Dodec}(x))$
- 9.19
1.  $\forall x(\text{Person}(x) \rightarrow \neg \text{Pet}(x))$
  4.  $\exists t(2 : 00 < t \wedge t < 3 : 00 \wedge \text{Fed}(\text{claire}, \text{folly}, t))$

7.  $\forall x((\text{Student}(x) \wedge \text{Angry}(x, 3 : 00)) \leftrightarrow x = \text{claire})$
10.  $\forall x(\text{Owned}(x, \text{pris}, 2 : 00) \rightarrow \text{Angry}(x, 2 : 05))$

### Section 9.7 (page 253)

- 9.23**
1. Evelyn
  4. Jon
  7. Any one of Melanie, J.R., or Claire satisfies this wff.
  10. Helen