

Practice: QL and QL⁼

Universe of Discourse **D** = persons; Lexicon:

a = Locke

F = is a philosopher

L = ... likes ...

b = Berkeley

G = is empiricist

K = ... knows ...

c = Hume

H = is an atheist

R = ... prefers ... to ...

1. Every philosopher who knows Locke likes him.
2. There is an empiricist philosopher who is not an atheist.
3. Every empiricist philosopher likes Locke.
4. There is nobody who does not prefer Hume to Berkeley.
5. Every atheist who knows Hume is not liked by Berkeley and Locke.
6. $\forall x(Fx \ \& \ Rxba) \supset Lcx$
7. $\exists x \forall y(Fx \ \& \ (Hx \vee Kxc) \ \& \ Rxyb)$
8. $\exists x(Fx \ \& \ \forall y(Hy \supset Lxy))$
9. $\sim \exists x(Gx \ \& \ \exists y(Hy \ \& \ Lxy)) \supset \forall z((Fx \ \& \ \sim Kxa) \supset Rzb\hat{c})$
10. $\sim \forall x(Fx \ \& \ (\exists yLxy \ \& \ Gy)) \supset \forall z((Hz \ \& \ Lzx) \supset Kxz)$

11. Only Hume prefers Locke to Berkeley.
12. Everybody except Locke knows either Berkeley or Hume.
13. Everybody who likes Hume likes no one else.
14. Hume is the only empirist and atheist philosopher.
15. The most known philosopher is an empiricist.
16. $\exists x(Kbx \ \& \ \sim(x = a \ \& \ x = c))$
17. $\sim c = b \supset \exists x \exists y (Kxa \ \& \ Ky a) \ \& \ \sim x = y$
18. $\forall x(Lxc \supset \sim \exists y(Lxy \ \& \ \sim y = c))$
19. $\exists x((Fx \ \& \ Gx \ \& \ Hx) \ \& \ \forall y(Fy \ \& \ Gy \ \& \ Hy) \supset y = x)$
20. $\exists x(Fx \ \& \ Gx) \ \& \ \forall y(Fx \ \& \ Gx) \supset x = y)) \ \& \ (Lcx \supset Hx)$
21. $\exists x \exists y \exists z(((Fx \ \& \ Gx) \ \& \ (Fy \ \& \ Gy) \ \& \ (Fz \ \& \ Gz) \ \& \ (\sim x = y \ \& \ \sim x = z \ \& \ \sim y = z))$
 $\ \& \ \forall w((Fw \ \& \ Gw) \supset (w = x \vee w = y \vee w = z)))$

