

Predicate Logic II

1. To comfort the passengers, the captain of a sinking ship says, 'There is a lifevest for everybody.' Express in QL what he says and what he means.
2. Translate into QL, using the following lexicon: a = Beckham, b = Kant, c = Hume, F = is a philosopher, G = speaks Latin, R = likes the work of.
 - (a) Hume is liked by Kant but not by Beckham.
 - (b) Neither Hume nor Kant like the work of Beckham.
 - (c) All philosophers who speak Latin like someone who likes Kant.
 - (d) Anyone who likes the work of Beckham is not a philosopher.
 - (e) If a Latin-speaking philosopher likes the work of Hume or Kant, she does not like the work of Beckham.
 - (f) Anyone who likes the work of someone else is a philosopher who does not speak Latin.
 - (g) If Kant does not like the work of Hume then Beckham speaks Latin and is a philosopher.
3. Translate these QL sentences into English. Lexicon: $R = x$ attracts y .¹
 - (a) $\forall x \forall y Rxy$
 - (b) $\exists y \forall x Rxy$
 - (c) $\forall x \exists y Rxy$
 - (d) $\exists x \forall y Rxy$
 - (e) $\forall x \forall y \sim Rxy$
 - (f) $\exists x \forall y \sim Rxy$
 - (g) $\forall y \exists x Rxy$
4. Given the following lexicon, translate these sentences of QL= into English or vice versa. Lexicon: a = Juliet, b = Romeo, c = Fido, F = speaks Italian, R = loves.
 - (a) If Juliet speaks Italian but Romeo does not, then they are different people.
 - (b) Everyone except Juliet loves Fido.
 - (c) Only Juliet loves Romeo.
 - (d) At most one Italian speaker loves Fido.
 - (e) $\forall x (Rxa \supset \sim \exists y (Rxy \ \& \ \sim y = a))$
 - (f) $\exists x (\sim x = a \ \& \ Rcx)$
 - (g) $\forall x (Fx \ \& \ \sim (x = a \vee x = b)) \supset \exists y (Rxy \ \& \ y = c)$
 - (h) $Fb \ \& \ \forall x (Fx \supset x = b)$

¹ After I. Copi, see <http://legacy.earlham.edu/~peters/courses/log/transtip.htm>.

