p.211 A6) No F are G. All H are G ∴ No H are F.

$$\neg\exists x(F(x)\wedge G(x)),\ \forall x(H(x)\rightarrow G(x))\ \therefore\ \neg\exists x(H(x)\wedge F(x))$$

F G 4

A14) Some F is G. All G are H. ∴ Some H is F.

$$\exists x(F(x)\wedge G(x)),\ \forall x(G(x)\rightarrow H(x))\ \therefore\ \exists x(H(x)\wedge F(x))$$

B1) $\neg V(h)\wedge\neg V(i)$

B2) $\neg\exists x(S(x)\wedge K(x))$

B3) $K(i)\vee\neg\exists x(K(x))$

B4) $S(h)\wedge\neg\exists x(V(x)\wedge S(x))$

p. 213 #6 Two ways

domain: babies

$I(x)$: $\_\_x$ is illogical

$C(x)$: $\_\_x$ can manage a crocodile

b: Berthold

g: Gray

$\forall x\,(\boxed{I}(x))$

$\forall x\,(I(x) \to \neg C(x))$

"Berthold is a baby" ~ automatically true by choice of domain — nothing to write!

$\neg C(b)$

domain: human beings

$I(x)$: $\_\_x$ is illogical

$C(x)$: $\_\_x$ can manage a crocodile

$B(x)$: $\_\_x$ is a baby

b: Berthold

$\forall x\,(B(x) \to I(x))$

$\forall x\,(I(x) \to \neg C(x))$

$B(b)$

$\neg C(b)$

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#4) $L(i,i)$

#5) $L(k,i) \wedge \neg L(i,k)$

#6) $L(i,k)$

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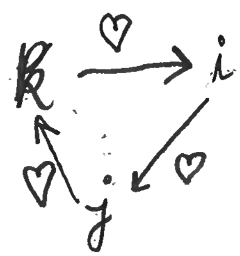
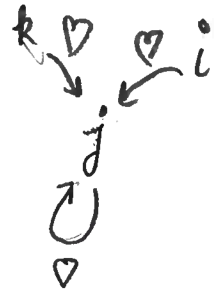
models

#7) $\forall x \exists y \, L(x,y)$



#8) $\exists x \forall y \, L(y,x)$



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#9) $\exists x (D(x) \wedge \theta(g,x))$

#10) $\exists x \exists y (D(x) \wedge \theta(y,x))$

#11) $\forall x \left(\underline{F(x,g)} \to \exists y (D(y) \wedge \theta(x,y)) \right)$

$\forall x \exists y (F(x,g) \to (\theta(y) \wedge \theta(x,y)))$

#12) $\forall x \forall y \exists z_1 \exists z_2 \left((D(z_1) \wedge \theta(x,z_1)) \to ((F(x,y) \wedge D(z_2)) \wedge \theta(y,z_2)) \right)$

dog owners