1. Translating into logic

(a) $\forall x \exists y \exists z ( Prime(x) \rightarrow ( Prime(y) \wedge Prime(z) \wedge Sum(y, z, x) ) )$

(b) $\forall x \exists y \exists z ( Prime(y) \wedge Prime(z) \wedge Greater(y, x) \wedge Greater(z, x) \wedge Sum(y, 2, z) )$

(c) $\exists x \forall y ( \neg Prime(x) \wedge ( Even(y) \rightarrow ( Greater(y, x) \vee Equal(x, y) ) ) )$

(d) $\neg \exists x ( Even(x) \wedge Prime(x) )$

2. not so negative

(a) Domain of discourse: all people

Predicate domination: $P(x, y)$ ::= "y is x's parent."

$\neg \forall x \exists y \exists z ( P(x, y) \wedge P(x, z) )$

$\equiv \exists x \forall y \forall z \neg ( P(x, y) \wedge P(x, z) )$ de Morgan's Law

$\equiv \exists x \forall y \forall z ( \neg P(x, y) \vee \neg P(x, z) )$ de Morgan's Law