(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

(b) Domain of discourse: all CSE courses

Predicate domination: $L(x)$ ::= "x is 300-level course"

$P(x,y)$ ::= "y is prerequisite course of x"

$\neg \left(\left(\exists z (P(x,z) \wedge L(x)) \vee (L(x) \rightarrow P(x,y)) \right) \exists z \exists y \exists x \forall \right)$

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

$\equiv \exists x \forall y (\neg (L(x) \rightarrow P(x,y))) \vee \forall x \forall y \exists z (\neg (P(x,z) \vee P(x,y) \vee L(x)))$

$\equiv \exists x \forall y (\neg (\neg L(x) \vee P(x,y))) \vee \forall x \forall y \exists z (\neg P(x,z) \wedge \neg P(x,y) \wedge \neg L(x))$ Law of implication

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