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Assignment 1.3

Assignment: Section 1.4: 6, 8, 10, 12, 16, 24 (7th edition)

6.

a) There's a student in my school who has visited North Dakota.

b) Every student in school has visited North Dakota

c) No students in my school have visited North Dakota

d) There's a student in my school who hasn't visited North Dakota

e) Not every student in school has visited North Dakota

f) No students at school have ever visited North Dakota

8.

a) If an animal is a rabbit, then it hops.

b) Every animal is a rabbit that hops.

c) There is an animal that if it is a rabbit then it hops

d) There's an animal that is a hopping rabbit

10.

a) $\exists x(C(x) \land D(x) \land F(x))$

b) $\forall x(C(x) \lor D(x) \lor F(x))$

c) $\exists x(C(x) \land \neg D(x) \land F(x))$

d) $\neg \exists x(C(x) \land D(x) \land F(x))$

e) $\exists x C(x) \land \exists x D(x) \land \exists x F(x)$

12.

a) 0 + 1 > 2(0) = True

b) -1 + 1 > 2(-1) = True

c) 2 > 2(1) = False

d) 0 + 1 > 2(0) = True

e) 2 + 1 > 2(2) = False

f) 1 + 1 > 2(1) = False

g) 0 + 1 < 2(0) = False

16.

a) True

b) False

c) True

d) False

24.

a)
$\forall x C(x)$.
$\forall x(I(x) \rightarrow C(x))$
b)
$\exists x M(x)$
$\exists x(I(x) \wedge M(x))$
c)

$\exists x \neg S(x)$

$\exists x(I(x) \wedge \neg S(x))$
d)
$\forall x E(x)$
$\forall x(I(x) \rightarrow E(x))$
e)

$\exists x \neg R(x)$

$\exists x(I(x) \wedge \neg R(x))$