Homework02: 22CST 蒋云翔

Section 1.4

Exercises 24.

a. ① let A(x) be a function denoting "x has a cellular ~~cou~~ phone"

① $\forall x A_x$

② let B(x) be a function denoting "x is in your class"

~~$\exists x$~~ $\forall x (B(x) \rightarrow A(x))$

b. let A(x) be a function denoting "x has seen a foreign movie"

B(x) "x is in your class"

① $\exists x A(x)$

② $\exists x (A(x) \wedge B(x))$

c. let A(x) be a function denoting "x cannot swim"

B(x) "x is in your class"

① $\exists x A(x)$

② $\exists x (A(x) \wedge B(x))$

d. let A(x) be a function denoting "x can solve quadratic equations)

B(x) "x is in your class"

① $\forall x A(x)$

② $\forall x (B(x) \rightarrow A(x))$

Section 1.5

Exercises: 6:

a. Student Randy Goldberg ~~have~~ has CS 252 class.

b. There are somes students have Math 695 class.

c. Student Carol Sitea has a class.
at least

d. There is a student has both Math 222 class and CS255 class.

Ex 20. $A(x,y)$

a. let ~~A(x)~~ be a function denoting "$x \cdot y > 0$" $B(x,y)$ denotes "$x>0$, $y>0$"

~~$\forall x (B(x) \to A(x))$~~ $\forall x \forall y (B(x) \to A(x))$

b. let $A(x,y)$ denotes "$\frac{x+y}{2} > 0$" $B(x,y)$ denotes "$x>0, y>0$"

$\forall x \forall y (B(x) \to A(x))$

c. let $A(x,y)$ denotes "$x-y>0$" $B(x,y)$ denotes "$x<0, y<0$"

$\exists x \exists y (B(x) \wedge A(x))$

d. let $A(x,y)$ denotes "$|x+y| \leq |x| + |y|$"

$\forall x \forall y A(x,y)$

Ex 24.

a. There exists a ~~mirror~~ x for any y that $x+y$ ~~=~~ y

b. for any x, y, is $x \geq 0$ and $y < 0$, then $x - y > 0$

c. ~~There exists x a~~ ~~n~~, ~~y~~, ~~[illegible]~~

c. there ~~exi~~ exists x and y that ~~it~~ satisfy $x \leq 0$ and ≤ 0 and $x-y>0$

d. for any x, y that $x \neq 0$ and $y \neq 0$ ~~or~~ if and only if $xy \neq 0$