Tarski’s World

First assume that our domain is set of all cubes.

Every cube is in front of b
$\forall x\ FrontOf(x,b\ )$

b is in front of everything
$\forall x\ FrontOf(b, x)$

If our domain contains not only cubes:

b is in front of every cube
$\forall x(Cube(x)\rightarrow FrontOf(b,x))$

b is in front of every small cube
$\forall x((Cube(x)\wedge Small(x))\rightarrow FrontOf(b,x))$

t’s not the case that b is a large cube
$\neg\exists y\ (Large(y) \wedge Cube(y) \wedge b = y)$

It’s not the case that something is a large cube
$\neg\exists y\ (Large(y) \wedge Cube(y) \wedge \exists x\ x = y)$

Everything between c and b is a
$\forall x(Between(x,c,b)\rightarrow x=a)$

Everything between c and b is a cube
$\forall x\ (Between(x, c, b) \rightarrow \exists y\ (Cube(y) \wedge x = y))$

Every cube is to the left of a tetrahedron
$\forall x[Cube(x)\rightarrow\exists y(Tet(y)\wedge LeftOf(x,y))]$

Some tetrahedron is in front of every small cube
$\exists x[Tet(x)\wedge\forall y((Small(y)\wedge Cube(y))\rightarrow FrontOf(x,y))]$

Some cube with nothing in front of it has something in back of it
$\exists x[(Cube(x)\wedge\forall y\neg FrontOf(y,x))\wedge\exists zBackOf(z,x)]$

Every cube is the same size as a particular tetrahedron
$\exists y[Tet(y)\wedge\forall x(Cube(x)\rightarrow SameSize(x,y))]$