

Homework Handout #4: Translating from Predicate Logic

Instructions: Use the given interpretations to translate the following arguments written in predicate logic into natural, English sentences.

Ax: "x is an athlete"

Bx: "x is brawny"

Cx: "x is a champion"

m: "Mary"

g: "Gail"

n: "Ned"

1.     1.  $(x)(Ax \supset Bx)$   
       2.  $Am \bullet An$                      /  $Bm \bullet Bn$
  
2.     1.  $(x)(Ax \supset Bx)$   
       2.  $(x)(Bx \supset Cx)$                  /  $(x)(Ax \supset Cx)$
  
3.     1.  $(x)(Bx \supset Cx)$   
       2.  $(\exists x)(Ax \bullet Bx)$                /  $(\exists x)(Ax \bullet Cx)$
  
4.     1.  $(x)(Ax \supset Bx)$   
       2.  $\sim Bm$                          /  $(\exists x)\sim Ax$
  
5.     1.  $(x)[Ax \supset (Bx \vee Cx)]$   
       2.  $Ag \bullet \sim Bg$                    /  $Cg$
  
6.     1.  $(x)[(Ax \bullet Bx) \supset Cx]$   
       2.  $(\exists x)(Bx \bullet \sim Cx)$            /  $(\exists x)\sim Ax$
  
7.     1.  $(\exists x)Ax \supset (x)(Cx \supset Bx)$   
       2.  $(\exists x)(Ax \vee Bx)$   
       3.  $(x)(Bx \supset Ax)$                  /  $(x)(Cx \supset Ax)$