

pg. 96 #6 (translate)

premise: H_k

conclusion: $(\exists x)(Hx)$

pg. 96 #6 | From the premise

H_k

prove

$(\exists x)(Hx)$.

Soln:

{1} H_k

k Premise

{1} $(\exists x)(Hx)$

1 EG

note: that k is flagged in line 1 does not
restrict our ability to use EG ~ it
would restrict our ability to use UG

pg. 99 #1

Find the error:

{1}	(1)	$(\forall x)(\exists y)(x \neq y)$	Premise
{1}	(2)	$(\exists y)(y \neq y)$	1 US

The error is in using US on line (1) ~
we cannot substitute x by y because
the use of US should make the variable
that goes in the place of x a free variable
in line (2), but with the line (2) above,
it became bound.

pg. 99 #4 Find the error:

{1}	(1)	$(\forall x)(x = x)$	Premise
{1}	(2)	$x = y$	1 US
{1}	(3)	$(\forall y)(x = y)$	2 UG
{1}	(4)	$(\forall x)(\forall y)(x = y)$	3 UG

The error is in the use of US in line (2) ~
one instance of x was replaced by x while
the other was replaced by y ~ they should
have been replaced by the same variable.