1

Reminder:

function is also a relation

5={5,,5,5,5,5,

$$f(s_i)=s_i \iff f_{s_is_i}$$

$$f(s_2) = s_3 \iff f_{s_2s_3}$$

$$f(S_4)=S_1$$

$$f = d(S_1, S_1), (S_2, S_3), (S_3, S_4), (S_4, S_1)$$

 $R_a = \{(s_i, s_i), (s_2, s_i)\}$  $R_{?}(p_{Vq}) = \{(s_i, s_i), (s_3, s_3)\}$ 

R ?7(819); a; ?(pvg) = R?7(pvg); Ra; R?(8vg)

$$=\left\{\left(S_{2},S_{i}\right)\right\}$$

(25)

## prove [x\*] ( -> [x][x\*] (

| i . | ************************************** | [d*] (ASS.                                |                  |
|-----|--|---|------------------|
| 2   |  | [d*] ( ASS.<br>[x*] ( YN[x][x"] ()        | Mix Axrom        |
| 3.  |  | en [x][x"]e                               | E > (1,2)        |
|     |  |   |                  |
| 4   |  | [x][x*](                                  | $E_{\Lambda}(3)$ |
| 5.  | [x*](                                  | $e \rightarrow [ \times ] [ \times^* ] e$ |                  |

[α](φ,ψ) Λ [α] φ Λ [β] φ) ~ ([αυβ] φ Λ[α]Ψ)

(3)

| [x](e>y) ~[x]e ~[B]e                      |                       |
|---|-----------------------|
| 2. ([x]en[B]e) - [xUB]e                   | Choice axiom          |
| 3 [A] (A) (B) (P)                         | $E_{\wedge}(i)$       |
| 4 [[XUB]4]                                | $E \rightarrow (2,3)$ |
| $\int [\alpha](\varphi \rightarrow \psi)$ | En(I)                 |
| 6. [x](x)(x)+([x]x>[x                     | Jy) principle(2)      |
| 7- [x] ( ) [x] (4)                        | E > (5,6)             |
| 8 [x]4                                    | $E_{\Lambda}(3)$      |
| 9 - [Ex]4                                 | E -> (7,8)            |
| 10 [XUB]en[X]Y                            | $I_{\Lambda}(9,4)$    |
| 11' Statement (too lazes to               | In (1,10)             |
| (opy)                                     |                       |