i.e x -0

Her if S, or Ho and [[4]B(a) = T Men [lez]B(o') = T

EREXHESS X C C 2 P 3 P:= X=1 6B PTXBeJ = P [x Hx+1] = (x+1) = 1

> Ex=03 X = X+1 8x=13 {x>03 x < x+1 \ x>0}

EP 68 e 3 S, {Q3 EP 28 !e] Su Sa3 EP3 of e 11en S, eles S2 203 1000 invaions 10 { P3 mile e do S 2P &8/19} €x ≤10 88 x <107 x ← x+1€x € 103 Branding condition Ex ≤ 105 While x < 10 do X+x+1 {x=10}) is falle. X < 10 28 7 (x < 10) (=) X S10 88 X >10

<=> × =(0

Clain for any eEB, S, S, Sz ES. if e then S, else & J Semantically Semantic Equivalence if le fler Sz else S, J Equivalent. (+ Bonus Content) i.e. if e Men S, else Sz, ortfor S, Sz E Shut (=) if le Mer Szelse S, , o Ho! are sematically equivalet S, of of Sz, offor the Spelce Sz, offor

while the do skip, of for

Skip, of Hor

false for as or, or

for all states or, or E state. => if le the Sperse Spotto assume Pro Hol to inversion there exists a Not always symarchic:

devidor of it Other S, else Sportfor Eille:

- (Ce JB(or) = T

and we have a deivolion of the Corm:

if e Ren S, else Sz, or Ho!

S, , 5 Dol

Morefme S, of Hol Neefore, ne vous 1e dévotion

S1, 0 461 if le Men Sq etce S,, or Ho Decause [:eTB(o) = ~[e]B(o)

- [c] (o)=1

and there exists a dairdion Meeter Sz, of For Pr

Mestore we have the dejudion

terale [:eDg(o)= > [cJg(o)

# if ! e Me Salse Sa, or Ho! (Sy investor

- [: c]<sub>B</sub>(o) = T = > 7 [(c]<sub>B</sub>(o) = T and we have the derudion

> Sz 10-1 if! e Mon S2 else S1, 0 \$50-1

Morfre Sz, or Hori

and [[e], (o) - 77 [e] (-)