12/1/2024 FOL to CNF conversion Step1: remove_implications return " or (Not (Spart 603), Spart (1)3) 4 Step2: apply-demorgans-law famile, replace ('Not (And ', 'DolNot)'). replace ('Not (And ', 'DolNot)'). 'And (Not') Step 3 o distribute quantifiers formula. replace ('Forall (', 'And ('). replace ('Enits (', 'or(') Step 1: Create a list of SKOLEM_CONSTANTS Step2: Find +, 3 If the attributes are lower care, replace them with a skolen constant remove used skolen constant or function from the If the attributer core both lowercase and appercase replace the appercase attribute with a Skolen function Step3: replace (=> with '-' transfolm - as $Q = (P \Rightarrow Q) \land (Q \Rightarrow P)$ Step4: replace => with '-' 84p5: Apply demorganis law Juplace ~[as ~Psod if (1 was present) oreplace at as NPINQ ib (b was present) suplace on with "

(Sudemization lo L to_cof ("animal (y) = stores (2,y) +)))

print (Skolemization lo L to_cof ("4x [4y [animally) => lover (2,y)]))

=> [=] z [loves (2,2)] " >))

print (lol to_cof ("famerican (x) & weapon (y) & selly (x,y, z) &

hoth [6(z)] => cori minal (x) +))

Output:

[wanimal (y) | Loves (2, y)] & [whores (2, y) | animal (y)]

[animal (G(x)) & weapon(y) | well (2, y, z) | whould (2) | (2) | (2) | (2) | (2) | (2) | (2) | (2) | (2) | (2) | (2) | (2) | (2) | (2) | (2) | (2) | (2) | (2) | (2) | (2) | (2) | (2) | (2) | (2) | (2) | (2) | (2) | (2) | (2) | (2) | (2) | (2) | (2) | (2) | (2) | (2) | (2) | (2) | (2) | (2) | (2) | (2) | (2) | (2) | (2) | (2) | (2) | (2) | (2) | (2) | (2) | (2) | (2) | (2) | (2) | (2) | (2) | (2) | (2) | (2) | (2) | (2) | (2) | (2) | (2) | (2) | (2) | (2) | (2) | (2) | (2) | (2) | (2) | (2) | (2) | (2) | (2) | (2) | (2) | (2) | (2) | (2) | (2) | (2) | (2) | (2) | (2) | (2) | (2) | (2) | (2) | (2) | (2) | (2) | (2) | (2) | (2) | (2) | (2) | (2) | (2) | (2) | (2) | (2) | (2) | (2) | (2) | (2) | (2) | (2) | (2) | (2) | (2) | (2) | (2) | (2) | (2) | (2) | (2) | (2) | (2) | (2) | (2) | (2) | (2) | (2) | (2) | (2) | (2) | (2) | (2) | (2) | (2) | (2) | (2) | (2) | (2) | (2) | (2) | (2) | (2) | (2) | (2) | (2) | (2) | (2) | (2) | (2) | (2) | (2) | (2) | (2) | (2) | (2) | (2) | (2) | (2) | (2) | (2) | (2) | (2) | (2) | (2) | (2) | (2) | (2) | (2) | (2) | (2) | (2) | (2) | (2) | (2) | (2) | (2) | (2) | (2) | (2) | (2) | (2) | (2) | (2) | (2) | (2) | (2) | (2) | (2) | (2) | (2) | (2) | (2) | (2) | (2) | (2) | (2) | (2) | (2) | (2) | (2) | (2) | (2) | (2) | (2) | (2) | (2) | (2) | (2) | (2) | (2) | (2) | (2) | (2) | (2) | (2) | (2) | (2) | (2) | (2) | (2) | (2) | (2) | (2) | (2) | (2) | (2) | (2) | (2) | (2) | (2) | (2) | (2) | (2) | (2) | (2) | (2) | (2) | (2) | (2) | (2) | (2) | (2) | (2) | (2) | (2) | (2) | (2) | (2) | (2) | (2) | (2) | (2) | (2) | (2) | (2) | (2) | (2) | (2) | (2) | (2) | (2) | (2) | (2) | (2) | (2) | (2) | (2) | (2) | (2) | (2) | (2) | (2) | (2) | (2) | (2) | (2) | (2) | (2

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print(Skolemization(fol_to_cnf("animal(y)<=>loves(x,y)")))
print(Skolemization(fol_to_cnf("∀x[∀y[animal(y)=>loves(x,y)]]=>[∃z[loves(z,x)]]")))
print(fol_to_cnf("[american(x)&weapon(y)&sells(x,y,z)&hostile(z)]=>criminal(x)"))
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 $[\sim animal(y)|loves(x,y)]&[\sim loves(x,y)|animal(y)]$ $[animal(G(x))&\sim loves(x,G(x))]|[loves(F(x),x)]$

[~american(x)|~weapon(y)|~sells(x,y,z)|~hostile(z)]|criminal(x)