1berto Becoma Come UN 2 - Strolemitation
MW & STORY SOX))
1) YXY9((PX AQY ~ 737 (R2 ASXD)) -> Yr (Qr V Sbx))
a) Remore implication
4x49(7(Px 100 17))+(Ft 10))
b) Apply De Morgan (Qr VSSA) V 4r (Qr VSSA)
b) Apply De Morgan  Exty (T(Px ray r T) + (Px ray)) V tr (ar v Son))  Exty (TPx ray) V 3 + (R + ray) V tr (ar v Sox))  Exty (TPx v Tay v 3 + (R + ray)) V tr (ar v Sox))  Exty (TPx v Tay v 3 + (R + ray)) V tr (ar v Sox))
4x 40 / 78x 1 100 / 200
C) Excluse
The tract Quantifiers  The tract Quantifiers  The tract Quantifiers  The tract Quantifiers  The track of
d) Reamanose and apply dishibutive property itentively to obtain PNF  With 32 th (7Px V 7Qy V Sbx V (Qr VRz) in(Sx5 V)Q)
to obtain PNT
4xv9 1 t v l
1 1 10 VQrVK2) 1 Syx 3x5
TXTYSEVI ( 1.7 CONS VQVR2) 1 (7Qy VSxx VSxx VSxx VS
Yx Yy Jz Yr (TYX V ( 105 ) SX V (1PX V ) Qy V Sx V Sx V Q
4x49324r (7Px V 7QyVSbxVQrVR2) 1 (7Qy VSbx VSxy VC 4x49324r (7Px V 7QyVSbxVQrVR2) 1 (7Px V 7QyVSbxVSxy VQ, VR2) 1 (7Px V 7QyVSbxVSxy VQ, VR2) 1 (7Px V 7QyVSbxVQrVR2) 1 (7Px
Ca Normal Joen.
e) Compert into shallon hours
e) Connert into Skalem Normal Jorn.  = g(x,5)  = g(x,5)  (178, y 70gy Sox V 0, V RJxy) ^ (78x V 70g V Sox V Sog)
e) Connert (MIC) $t = g(x,y)$

2) 3x(3y (Qy ~ Sox) -> +x (7 Sxx v Qx))

· Remore implication  $\exists x (\neg \exists y (Qy \land Sisx) \lor \forall x (\neg Sxx \lor Qx))$ 

· Inhoduce negation inside quantifiers

3× (Yb 7(Qy ~Sbx) V Yx (7Sxx V Qx))

· Rename the second x variable as t

3x (Y57 (Q5 ~ S5x) V + (7Stt VQt))

· Take out all the granhitiers and apply De Morgan

3x 45 + (7Q5 V 7S5x V 7Stt VQt)

· Convert into Skolem Normal Form substituing x bis a Skolem constant a

Hytt (705 v 755a v 75tt v Qt)

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8) 73x (73y (QGASGX) V 32 Yr (R2 V Txr2))
  · Introduce the negation of the outer grantifier
   YX7 (735 (QGASYX) V JZYY (RZVTXTZ))
  · Apples De Morgan and cangl double negative
    Yx (35 (Qn Sbx) A 7 32 Yr (R2 V Txr2))
 · Inhoduce He negation in to the existential quant
   Yx (35 (Q5 1 S5x) AHZ TYr (RZVTxrz))
  · In moduce the negation into the universal grantifier
    Yx(35(Q5 ASAx) in YZ 3r 7(RZ V TXTZ))
   · Apply De Morson and to put all the grant.
   · Convert into SNF defining J = J(x) for 5 and g = g(x, t) for r variable
       VX V2 (Qr.Jx 1 SJx 1 TR2 1 TTXgx2 Z)
4) Yx ((Px -> 3y (Qy ~Sxy)) -> Yz Sxz)
  · Remore internal implications
   Yx ( (TPX V 35(Q5 ASXS)) -> YZSXE)
  · Remore implication
   Yx (7(7Px V 35(Qy A Sxy)) V YZ Sxx)
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VX (Px A 774 (Qy A Sxy) V Yt Sxt)

Introduce negation in existential grantifier

VX (Px A Vy 7 (Qy A Sxy) V Yt Sxt)

Apply De Morgan · Apply Re Morgan · Apply De Morgan Yx (Px A Yy (TQ5 V 7 Sxs) V YZ Sxz) · Extract lle grantifiers · Apply dishibulice property YX YGYZ ((PXVSXZ) N(TQGVTSXGVSXZ)) ASYS AS CARAGO ) HE SYCE AN G of the following ins the three .

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want or side was described account .

(31254) - Kerned de vereje jag

(3x2 51 V ((4x2 x 66) 10 1 x 2 31 ) 1 2 4 4