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-- _____- PROOF _____-
-- Length of proof is 23.Level of proof is 16 .
-- 1 [ ]  $\overline{\overline{c2Uc1Uc2Uc1}} \neq c2$ 
-- 2 [ ]  $xUy = yUx$ 
-- 3 [ ]  $xU(yUz) = xUyUz$ 
-- 4 [ copy,3,flip.1 ]  $xUyUz = xU(yUz)$ 
-- 10,9 [ ]  $x^{\sim} = x$ 
-- 11 [ ]  $(xUy)^{\sim} = x^{\sim}Uy^{\sim}$ 
-- 13 [ ]  $(xoy)^{\sim} = y^{\sim}ox^{\sim}$ 
-- 15 [ ]  $xol = x$ 
-- 17 [ ]  $x^{\sim}oxoyU\bar{y} = \bar{y}$ 
-- 20,19 [ ]  $\bar{x}UyU\bar{x}U\bar{y} = x$ 
-- 26 [ para_into,9.1.1,9.1.1 ]  $x = x$ 
-- 30 [ para_into,13.1.1.1,15.1.1,flip.1 ]  $l^{\sim}ox^{\sim} = x^{\sim}$ 
-- 36 [ para_into,30.1.1.2,9.1.1,demod,10 ]  $l^{\sim}ox = x$ 
-- 39,38 [ para_into,36.1.1,15.1.1 ]  $l^{\sim} = l$ 
-- 41,40 [ back_demod,36,demod,39 ]  $lox = x$ 
-- 56 [ para_into,17.1.1.1.1,38.1.1,demod,41,41 ]  $\bar{x}U\bar{x} = \bar{x}$ 

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-- 78 [ para_from,56.1.1,4.1.1.1,flip.1 ]  $\bar{x} \cup (\bar{x} \cup y) = \bar{x} \cup y$ 
-- 128 [ para_into,19.1.1.2.1,56.1.1 ]  $\bar{x} \cup x \cup \bar{x} = x$ 
-- 184 [ para_into,128.1.1.1.1,2.1.1 ]  $x \cup \bar{x} \cup \bar{x} = x$ 
-- 213,212 [ para_into,184.1.1,2.1.1 ]  $\bar{x} \cup x \cup \bar{x} = x$ 
-- 255 [ para_into,78.1.1.2,212.1.1,demod,213 ]  $\bar{x} \cup x = x$ 
-- 267 [ para_into,78.1.1.2,19.1.1,demod,20 ]  $\bar{x} \cup y \cup x = x$ 
-- 285 [ para_from,255.1.1,11.1.1.1,flip.1 ]  $\bar{x} \cup x = x$ 
-- 287 [ para_from,255.1.1,4.1.1.1,flip.1 ]  $\bar{x} \cup (x \cup y) = x \cup y$ 
-- 345 [ para_into,267.1.1,2.1.1 ]  $x \cup \bar{x} \cup y = x$ 
-- 497 [ para_into,285.1.1.2,9.1.1,demod,10 ]  $\bar{x} \cup x = x$ 
-- 583 [ para_into,497.1.1,2.1.1 ]  $x \cup \bar{x} = x$ 
-- 604 [ para_from,583.1.1,19.1.1.1.1 ]  $\bar{x} \cup \bar{x} \cup \bar{x} = \bar{x}$ 
-- 647,646 [ para_from,287.1.1,345.1.1.2.1 ]  $\bar{x} \cup x \cup y = \bar{x}$ 
-- 653,652 [ back_demod,604,demod,647 ]  $\bar{x} = x$ 
-- 746,745 [ para_from,652.1.1,19.1.1.2.1.1,demod,653 ]  $\bar{x} \cup y \cup x \cup \bar{y} = \bar{x}$ 
-- 751 [ back_demod,1,demod,746,653 ]  $c2 \neq c2$ 
-- 752 [ binary,751.1,26.1 ]  $F$ 
-- ----- end of proof -----
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-- Search stopped by max_proofs option .  
--  
-- = = = = = end of search = = = = =  
--  
-- ----- statistics -----  
-- clauses given 52  
-- clauses generated 1081  
-- clauses kept 461  
-- clauses forward subsumed 982  
-- clauses back subsumed 2  
-- Kbytes malloced 638  
--  
-- ----- times ( seconds ) -----  
-- user CPU time 0.25 ( 0 hr,0 min,0 sec )  
-- system CPU time 0.0 ( 0 hr,0 min,0 sec )  
-- wall - clock time 1 ( 0 hr,0 min,1 sec )
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