Application of Satisfiability Monday, August 31, 2020 10:47 AM
Four propositions We need to assert:  (Pewery row antains every number.
(Tevery row contains every number.
2) very column contains every number.  (3) every 3+3 block contains every number.  (4) each cell contains no more than one number.  (5) A (2) A (3) A (4)
1 thery 373 block contains every number.
as call wortains no more them one number.
$(4) \text{ Pain, } (3) \land (4)$
Compound proposition < 1) 1 (2) 1 (3) 1 (4)
For Asserting that vow i' Contains number n, we have:
V = (i, j, n) $V = (i, j, n)$
1 1 1 1 2 1/2 Containe all on number, we have:
Asserting that row a continue of the final
Assertion of that row 'i' contains all a number, we have:  N=1 )=1  Keening that an rows contains all a number, we have:
Asserting that all rows contains all nonumbers, we have:
λ λ ψ p(υ,),η)
Asserting that all rows contains all nonumbers, we have:  \( \lambda \forall p(i,),n \) \( \lambda \forall p(i,),n \)
fortille and a numbers, he have:
Asserting that all Columns Contam all n numbers, we have: $ \begin{array}{cccccccccccccccccccccccccccccccccc$
$\sum_{i=1}^{n} n_{i} = 1$
$\int_{-\infty}^{\infty} \int_{-\infty}^{\infty} \int_{-\infty}^{\infty$
(b)
1 erl. Het row i et a given 3 x 3 block Contains V (3 3.
1 erl. that row 5 of a diven 2 /2 (3 , 3
$m{V}$

Asserting that row i of a given 3 x 5 block Contains number n, we have:  $V_p(3r+i,3s+j,n)$ Asserting that column j of a given 3 x3 block Contains number n, we have: VV p(3v+i,3s+j, i=1 j=1 n) Asserting that a given 3 x3 block contains all numbers

We have: \( \frac{1}{121} \) \( \frac{1}{2} \) To assent every 3x3 block hondains all numbers we have:

2 2 2 p(3r+i, 3s+j,n)

~=0 s=0 n=1 i=1 j=1

For all  $n \neq m$ , if  $p(i,j,n) \rightarrow \neg p(i,j,m)$