Meaning

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Stage 3. Propagate the information from Stage 1 to determine tables for the subformulas. When you have a table for σ , then you can announce the answer.

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+	0	1	2
0	0	1	2
1	1	2	0
2	2	0	1

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+	0	1	2	•	0	1	2
0	0	1	2	0	0	0	0
1	1	2	0	1	0	1	2
2	2	0	1	2	0	2	1

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+	0	1	2	
0	0	1	2	(
1	1	2	0	-
2	2	0	1	4

•	0	1	2
0	0	0	0
1	0	1	2
2	0	2	1

<	0	1	2	
0	F	T	Τ	
1	F	F	T	
2	F	F	F	



Compute the tables for the terms.

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t_1	0	1	2	t_2	0
0	0	1	1	0	0
1	1	1	0	1	1
2	1	0	1	2	1

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t_1	0	1	2	t_2	0	1	2
0	0	1	1	0	0	1	1
1	1	1	0	1	1	2	2
2	1	0	1	2	1	2	2

Compute the tables for the atomic formulas.

t_1	0	1	2]	t_2	0	1	2]	<	0	1	2
0	0	1	1		0	0	1	1		0	F	T	Τ
1	1	1	0		1	1	2	2		1	F	F	Т
2	1	0	1		2	1	2	2		2	F	F	F

Compute the tables for the atomic formulas.

t_1	0	1	2
0	0	1	1
1	1	1	0
2	1	0	1

t_2	0	1	2
0	0	1	1
1	1	2	2
2	1	2	2

<	0	1	2
0	F	Τ	T
1	F	F	Т
2	F	F	F

$t_1 < t_2$	0	1	2
0	F	F	F
1	F	T	T
2	F	T	T

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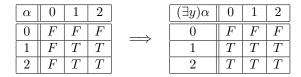
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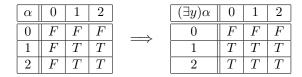
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α	0	1	2
0	F	F	F
1	F	T	T
2	F	Т	T

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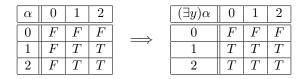


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$(\exists y)\alpha$	0	1	2
0	F	F	F
1	T	T	T
2	T	T	T

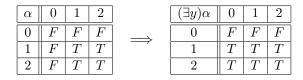
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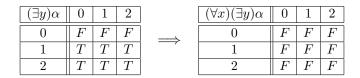


$(\exists y)\alpha$	0	1	2		$(\forall x)(\exists y)\alpha$	0	1	2
0	F	F	F	\rightarrow	0	F	F	F
1	T	T	T		1	F	F	F
2	T	T	T		2	F	F	F

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We already have the table for $\alpha = (t_1 < t_2)$ where $t_1 = (x + y)^2$ and $t_2 = x^2 + y^2$. We only need to compute the table for the formula $(\exists y)\alpha$ and then $(\forall x)(\exists y)\alpha$.

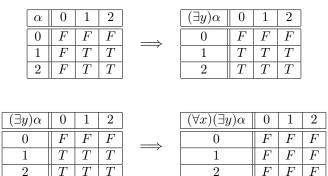




Conclusion:

Compute the tables for the subformulas.

We already have the table for $\alpha = (t_1 < t_2)$ where $t_1 = (x + y)^2$ and $t_2 = x^2 + y^2$. We only need to compute the table for the formula $(\exists y)\alpha$ and then $(\forall x)(\exists y)\alpha$.



Conclusion: The sentence is false in A.