S1 $f(a, x, g(x)) = f(u, v, w) = f(a, y, y)$

S	R	
$\emptyset$	$f(a, x, g(x)) = f(u, v, w) =$ $= f(a, y, y)$	Initial.
	$a = u$, $x = v$, $g(x) = w$, $u = a$, $v = y$, $w = y$	Desc.
$a = u$	$x = v$, $g(x) = w$, $u = u$, $v = y$, $w = y$.	Rez.
$a = u$	$x = v$, $g(x) = w$ $v = y$, $w = y$	Scoate.
$x = v$ $a = u$	$g(v) = w$, $v = y$, $w = y$	Rez.
$v = y$ $x = v$ $a = u$	$g(y) = w$ $w = y$	Rez.
$w = y$ $v = y$ $x = v$ $a = u$	$g(y) = y$	Esec

Scanned by CamScanner

Examen iunie 2018

$f(a, x, g(x))$, $f(u, u, w)$ $f(a, y, y)$

$a = ct$

	A	B
init	$f(a,x,g(x)) = f(u,u,w)$ $f(u,u,w) = f(a,y,y)$	
Descompune	$a = u$ $u = a$ $x = u$ $u = y$ $g(x) = w$ $w = y$	
Rezolvă	$x = u$ $u = y$ $g(x) = w$ $w = y$	$u = a$
Rezolvă	$x = u$ $u = y$ $g(x) = y$	$u = a$ $g(x) = w$
Rezolvă	$x = u$ $u = g(x)$	$u = a$ $g(x) = w$ $g(x) = y$
~~Rezolvă~~ EȘEC	$x = g(x)$ ~~EȘEC~~	$u = a$ $u = g(x)$ $y = g(x)$ $w = g(x)$

S IV

S II

(1) $m(e, c)$
(2) $m(d, b)$
(3) $f(a, b)$
(4) $f(a, c)$
(5) $p(a)$
(6) $p(d)$
(7) $p(x) :- f(Y, x), p(Y)$

?- $p(x), m(Y, x), p(Y)$

$G_0 = \neg p(x) \vee \neg m(Y, x) \vee \neg p(Y)$
$G_1 = \neg p(x) \vee \neg m(d, x)$ (SLD, 6, $\theta = \{y \leftarrow d\}$)
$G_2 = \neg f(Y_1, x_1) \vee \neg p(Y_1) \vee \neg m(d, x)$ (SLD, 7, $\theta = \{x \leftarrow x_1, y \leftarrow y_1\}$)
$G_3 = \neg f(a, x_1) \vee \neg m(d, x)$ (SLD 5 $\theta = \{y_1 \leftarrow a\}$)
$G_4 = \neg m(d, x)$ (SLD, 3 $\theta = \{x \leftarrow b\}$)
$G_5 = \square$ (SLD 2 $\theta = \{x \leftarrow b\}$)

S III

$\neg q, p \vee q, s \rightarrow \neg p, s \vdash \neg r.$

1. $\neg q$ premiză
2. $p \vee q$ premiză
3. $s \rightarrow \neg p$ premiză
4. s premiză

$6_7 = \square$

$\underline{P_3}$

$\neg q$

$p \vee q$

$s \rightarrow \neg p$

$s \vdash \neg r \iff \vdash s \rightarrow \neg r$

1. $\neg q$ premiză
2. $p \vee q$ premiză
3. $s \rightarrow \neg p$ premiză
4. $p \vee \neg q$ $(\vee i_2\ \cancel{\ }, 1)$
5. s ipoteză
6. $\neg p$ $(\rightarrow e\ \cancel{\ }\ 3, 5)$
7. $\cancel{p \vee q}$ $\neg p \wedge \neg q$ $(\wedge i\ \cancel{\ }\ 1, 6)$
8. $\perp$ $(\neg e\ 2, 7)$
9. $\neg s$
10. $\cancel{\ }$ $\vdash s \rightarrow \neg r$

S_{III}. $\neg q,\ p \vee q,\ s \to \neg p,\ s \vdash \neg r$.

~~Premize~~ : 1. $\neg q$ premiză

2. $p \vee q$ premiză

3. $s \to \neg p$ premiză

4. s premiză

5. $\neg p$ $(\to e, 4)$

~~6 q (~~

S_{IV}. $$\exists x \left(\underbrace{(D(x) \vee \exists y P(y))}_{t_1} \to (\underbrace{\forall y D(y) \wedge P(c)}_{t_2}) \right)$$

$$\exists x \left(\neg (D(x) \vee \exists y P(y)) \vee (\forall y D(y) \wedge P(c)) \right)$$

$$\exists x \left((\neg D(x) \wedge \forall y \neg P(y)) \vee (\forall y D(y) \wedge P(c)) \right)$$

$$\exists x \left((\neg D(x) \wedge \forall y \neg P(y)) \vee (\forall w D(w) \wedge P(c)) \right)$$

$$\exists x \forall w \forall y \left((\neg D(x) \wedge \neg P(y)) \vee (\underbrace{D(w) \wedge P(c)}_{h}) \right)$$

$$\exists x \forall w \forall y \left((\neg D(x) \vee h) \wedge (\neg P(y) \vee h) \right)$$

$$\exists x \forall w \forall y \left((\neg D(x) \vee (D(w) \wedge P(c))) \wedge (\neg P(y) \vee (D(w) \wedge P(c))) \right)$$

$$\exists x \forall w \forall y \left((\neg D(w) \vee D(w)) \wedge (\neg D(x) \vee P(c)) \wedge ((\neg P(y) \vee D(w)) \wedge (\neg P(y) \vee P(c))) \right)$$

~~$\exists x \forall w \forall y ((\neg D(x) \vee P(c)) \wedge (\neg D(x) \vee P(c) \wedge$~~

$$\exists x \forall w \forall y \left((\neg D(x) \vee P(c)) \wedge (\neg P(y) \vee D(w)) \wedge (\neg P(y) \vee P(c)) \right)$$

$$\forall w \forall y \left((\neg D(a) \vee P(c)) \wedge (\neg P(y) \vee D(w)) \wedge (\neg P(y) \vee P(c)) \right)$$

$C = \{ \{\neg D(a), P(c)\}, \{\neg P(y), D(w)\}, \{\neg P(y), P(c)\} \}$

Sv. $\varphi ::= \forall x \forall y \forall z \left(P(x, f(a,y)) \wedge Q(f(x,y)) \wedge \neg P(b, f(z,b))\right)$

$ar(P) = 2$

$ar(Q) = 1$

$ar(f) = 2$

a, b - const.

a/b $f(a,b))$

$f(f(a,b), \cancel{f(a})$ $f(f(a,b), a)$

$f(a, f(a,b))$ — $f(b, f(a,b))$ ...

$T(\varphi) = \{ a, b, f(a,b), f(f(a,b)), f(f(a,b))$

$f(f(f(a,b))), \ldots \}$

$Jh(\varphi) = \{ Q(a), Q(b), Q(f(a,b)), Q(f(f(a,b))), \ldots$

$P(a,b), P(f(a,b), f(a,b)),$

$P(f(a,b), f(f(a,b)), \ldots$

$P(f(f(a,b), f(a,b)), \ldots$

$P(a, f(a,b)), P(a, f(f(a,b)$

$Q(a), Q(b), Q(f(a,b)), Q(f(b,a)$

$P(a,b)$