

## Equation assignment sequence for variable $\psi$

no	var	equ	quations	token
61	26	-	$A^v :: \text{port variable}$	
60	64	-	$P_{NS,KS} :: \text{port variable}$	
59	9	-	$r_{xN} :: \text{port variable}$	
58	88	-	$K^o_K :: \text{port variable}$	
57	62	-	$P_{N,NK} :: \text{port variable}$	
56	127	-	$D_{N,A} :: \text{port variable}$	
55	23	-	$r_{zN} :: \text{port variable}$	
54	10	-	$r_{yN} :: \text{port variable}$	
53	86	-	$N_{S,K} :: \text{port variable}$	
52	61	-	$P_{S,NS} :: \text{port variable}$	
51	60	-	$P_{K,NK} :: \text{port variable}$	
50	63	-	$P_{NK,KS} :: \text{port variable}$	
49	59	-	$P_{NS,AS} :: \text{port variable}$	
48	5	-	$F_{N,A} :: \text{port variable}$	
47	128	-	$D_{NS,AS} :: \text{port variable}$	
46	6	-	$t :: \text{port variable}$	
45	12	-	$S_N :: \text{port variable}$	
44	11	-	$U_N :: \text{port variable}$	
43	1	-	$\# :: \text{port variable}$	

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no	var	equ	quations	token
42	13	-	$V_N :: \text{port variable}$	
41	27	16	$Bo_N := \text{Instantiate}(S_N, \#)$	
40	69	47	$m_N := \lambda_S \overset{S \in NS}{\star} n_{NS}$	
39	87	64	$E_{aNK} := \text{Instantiate}(P_{N,NK} \overset{N}{\star} R_N . T_{NK}, \#)$	
38	28	17	$R_N := A^v . Bo_N$	
37	115	91	$c_{KS}^o := \text{Instantiate}(c_{KS}, \#)$	
36	114	90	$c_{KS} := c_{NS} \overset{NS}{\star} P_{NS,KS}$	
35	71	49	$\rho_N := m_N . (V_N)^{-1}$	
34	50	37	$k_{xN}^c := \left( \lambda_S \overset{S \in NS}{\star} (\mu_{NS})^{-1} \right) . (V_N)^{-1} . \frac{\partial U_N}{\partial p_N} . v_{xN}$	
33	65	46	$d_A := \text{sign} \left( F_{N,A} \overset{N}{\star} p_N \right)$	
32	4	3	$0.5 := \text{Instantiate}(\#, \#)$	
31	21	12	$v_{xN} := \frac{\partial r_{xN}}{\partial t}$	
30	77	55	$T_{NK} := P_{N,NK} \overset{N}{\star} T_N$	
29	89	65	$K_{NK} := K_K^o \odot \exp((-E_{aNK}) . \left( R_N \overset{N}{\star} P_{N,NK} . T_{NK} \right)^{-1})$	
28	116	92	$\phi_{KS} := \prod (c_{KS} . (c_{KS}^o)^{-1})$	
27	98	74	$\hat{V}_A := (\rho_N)^{-1} . k_{xN}^c . A_{yzN} . D_{N,A} \overset{N}{\star} p_N$	
26	109	85	$c_{AS} := (0.5 . (F_{NS,AS} - d_A \odot  F_{NS,AS} )) \overset{NS}{\star} c_{NS}$	
25	95	71	$A_{yzN} := r_{yN} . r_{zN}$	
24	54	41	$k_{xNS}^d := (\mu_{NS})^{-1} . \left( v_{xN} \odot \left( (V_N)^{-1} \odot \frac{\partial U_N}{\partial \mu_{NS}} \right) \right)$	
23	93	69	$N_{NS,NK} := P_{S,NS} \overset{S}{\star} \left( (P_{K,NK} . T_{NK} . (T_{NK})^{-1}) \overset{K}{\star} N_{S,K} \right)$	

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no	var	equ	quations	token
22	117	93	$\xi_{NK} := K_{NK} \cdot P_{NK,KS} \overset{KS}{\star} \phi_{KS}$	
21	110	86	$\hat{n}_{AS}^c := \hat{V}_A \odot c_{AS}$	
20	73	51	$F_{NS,AS} := F_{N,A} \odot P_{NS,AS}$	
19	104	80	$\hat{n}_{AS}^d := A_{yzN} \odot (-k_{xNS}^d) \cdot D_{NS,AS} \overset{NS}{\star} \mu_{NS}$	
18	118	94	$\tilde{n}_{NS} := V_N \odot \left( N_{NS,NK} \overset{NK}{\star} \xi_{NK} \right)$	
17	111	87	$\hat{n}_{NS}^c := F_{NS,AS} \overset{AS}{\star} \hat{n}_{AS}^c$	
16	105	81	$\hat{n}_{NS}^d := F_{NS,AS} \overset{AS}{\star} \hat{n}_{AS}^d$	
15	2	1	$0 := \text{Instantiate}(\#, \#)$	
14	8	5	$t_e := \text{Instantiate}(t, \#)$	
13	7	4	$t_o := \text{Instantiate}(t, \#)$	
12	150	124	$n_{NS}^o := \text{Instantiate}(n_{NS}, \#)$	
11	119	95	$\dot{n}_{NS} := \hat{n}_{NS}^c + \hat{n}_{NS}^d + \tilde{n}_{NS}$	
10	119	129	$\dot{n}_{NS} := \text{Instantiate}(\dot{n}_{NS}, 0)$	
9	42	116	$n_{NS} := \int_{t_o}^{t_e} \dot{n}_{NS} dt + n_{NS}^o$	
8	45	114	$\mu_{NS} := \text{Instantiate}(\mu_{NS}, \#)$	
7	45	32	$\mu_{NS} := \frac{\partial U_N}{\partial n_{NS}}$	
6	16	7	$T_N := \frac{\partial U_N}{\partial S_N}$	
5	16	113	$T_N := \text{Instantiate}(T_N, \#)$	
4	15	6	$p_N := \left( -\frac{\partial U_N}{\partial V_N} \right)$	
3	15	115	$p_N := \text{Instantiate}(p_N, \#)$	

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no	var	equ	quations	token
2	108	127	$c_{NS} := \text{Instantiate}(c_{NS}, \#)$	
1	108	84	$c_{NS} := (V_N)^{-1} \odot n_{NS}$	
0	152	126	$\psi := \text{MixedStack}(p_N, T_N, \mu_{NS}, c_{NS})$	