# Equation assignment sequence for variable $\hat{n}^{c}{}_{NS}$

| no | var | equ | quations | token |
|---|---|---|---|---|
| 72 | $V_1 47$ | - | $P_{NK}$ :: port variable | |
| 71 | $V_1 55$ | - | $B$ :: port variable | |
| 70 | $V_3 8$ | - | $K^{o}{}_{K}$ :: port variable | |
| 69 | $V_3 3$ | - | $P_{K,NK}$ :: port variable | |
| 68 | $V_1 58$ | - | $N_{K,KS}$ :: port variable | |
| 67 | $V_9 1$ | - | $D_{NS,AS}$ :: port variable | |
| 66 | $V_3 6$ | - | $P_{NS,KS}$ :: port variable | |
| 65 | $V_3 5$ | - | $P_{N,NK}$ :: port variable | |
| 64 | $V_1 27$ | - | $1_S$ :: port variable | |
| 63 | $V_1 4$ | - | $S_N$ :: port variable | |
| 62 | $V_2 4$ | - | $A^{v}$ :: port variable | |
| 61 | $V_1 0$ | - | $r_{xN}$ :: port variable | |
| 60 | $V_5$ | - | $t$ :: port variable | |
| 59 | $V_4 0$ | - | $\lambda_S$ :: port variable | |
| 58 | $V_8$ | - | $F_{N,A}$ :: port variable | |
| 57 | $V_1 2$ | - | $r_{zN}$ :: port variable | |
| 56 | $V_1 1$ | - | $r_{yN}$ :: port variable | |
| 55 | $V_1 5$ | - | $V_N$ :: port variable | |
| 54 | $V_1 3$ | - | $U_N$ :: port variable | |

*Continued on next page*

| no | var | equ | quations | token |
|---|---|---|---|---|
| 53 | $V_9 0$ | - | $D_{N,A}$ :: port variable | |
| 52 | $V_1$ | - | $\#$ :: port variable | |
| 51 | $V_7 0$ | - | $F_{NS,AS}$ :: port variable | |
| 50 | $V_6 7$ | $E_4 5$ | $c_{NS} := c_{NS}$ | |
| 49 | $V_1 52$ | $E_1 24$ | ${c^o}_{NK,KS} := \text{Instantiate}(c_{NK,KS}, \#)$ | |
| 48 | $V_1 51$ | $E_1 23$ | $c_{NK,KS} := P_{NK} \,.\, \left(P_{NS,KS} \overset{NS}{\star} c_{NS}\right)$ | |
| 47 | $V_5 2$ | $E_3 1$ | $k^d_{xNS} := (\mu_{NS})^{-1} \,.\, \left(v_{xN} \odot \left((V_N)^{-1} \odot \frac{\partial U_N}{\partial \mu_{NS}}\right)\right)$ | |
| 46 | $V_6 2$ | $E_4 1$ | ${E^a}_{NK} := \text{Instantiate}(R \,.\, T_{NK}, \#)$ | |
| 45 | $V_6 0$ | $E_3 9$ | $T_{NK} := P_{N,NK} \overset{N}{\star} T_N$ | |
| 44 | $V_1 57$ | $E_1 27$ | $R := A^v \,.\, B$ | |
| 43 | $V_1 53$ | $E_1 25$ | $x_{NK,KS} := ({c^o}_{NK,KS})^{-1} \,.\, c_{NK,KS}$ | |
| 42 | $V_2$ | $E_1$ | $1 := \text{Instantiate}(\#, \#)$ | |
| 41 | $V_8 6$ | $E_6 3$ | $k^d_{xNS} := k^d_{xNS}$ | |
| 40 | $V_6 3$ | $E_4 2$ | $K_{NK} := {K^o}_K \odot exp((-{E^a}_{NK}) \,.\, (R \,.\, T_{NK})^{-1})$ | |
| 39 | $V_1 60$ | $E_1 29$ | $\phi_{NK} := \prod_{KS} {x_{NK,KS}}^{N_{NK,KS}}$ | |
| 38 | $V_1 59$ | $E_1 28$ | $N_{NK,KS} := P_{K,NK} \overset{K}{\star} N_{K,KS}$ | |
| 37 | $V_1 71$ | $E_1 38$ | $s := 0.5 \,.\, (1 + \text{sign}\,(t^o))$ | |
| 36 | $V_9 3$ | $E_6 8$ | ${\hat{n}^d}_{AS} := A_{yzN} \odot \left(-k^d_{xNS}\right) \,.\, D_{NS,AS} \overset{NS}{\star} \mu_{NS}$ | |
| 35 | $V_1 63$ | $E_1 30$ | $\tilde{n}_{NS} := V_N \overset{N}{\star} \left(P_{N,NK} \overset{NK}{\star} \left((K_{NK} \,.\, \phi_{NK}) \,.\, \left(P_{NS,KS} \overset{KS}{\star} N_{NK,KS}\right)\right)\right)$ | |
| 34 | $V_1 72$ | $E_1 39$ | $s := s$ | |

*Continued on next page*

| no | var | equ | quations | token |
|---|---|---|---|---|
| 33 | $V_1 68$ | $E_1 34$ | $n_{tN} := 1_S \overset{S \in NS}{\star} n_{NS}$ | |
| 32 | $V_1 65$ | $E_1 32$ | $boz_N := \text{Instantiate}(S_N, \#)$ | |
| 31 | $V_4 1$ | $E_2 0$ | $\lambda_S := \lambda_S$ | |
| 30 | $V_9 4$ | $E_6 9$ | $\hat{n}^d{}_{NS} := F_{NS,AS} \overset{AS}{\star} \hat{n}^d{}_{AS}$ | |
| 29 | $V_1 64$ | $E_1 31$ | $\tilde{n}_{NS} := \tilde{n}_{NS}$ | |
| 28 | $V_1 73$ | $E_1 41$ | $\hat{n}^{c,controlled}{}_{AS} := s \,.\, \hat{n}^c{}_{AS}$ | |
| 27 | $V_1 8$ | $E_7$ | $T_N := \frac{\partial U_N}{\partial S_N}$ | |
| 26 | $V_1 69$ | $E_1 35$ | $\xi_{NS} := (n_{tN})^{-1} \odot n_{NS}$ | |
| 25 | $V_1 66$ | $E_1 33$ | $R_N := A^v \,.\, boz_N$ | |
| 24 | $V_5 7$ | $E_3 6$ | $m_N := \lambda_S \overset{S \in NS}{\star} n_{NS}$ | |
| 23 | $V_7$ | $E_5$ | $t^e := \text{Instantiate}(t, \#)$ | |
| 22 | $V_6$ | $E_4$ | $t^o := \text{Instantiate}(t, \#)$ | |
| 21 | $V_1 10$ | $E_8 5$ | $n^o{}_{NS} := \text{Instantiate}(n_{NS}, \#)$ | |
| 20 | $V_1 01$ | $E_7 6$ | $\dot{n}_{NS} := \hat{n}^c{}_{NS} + \hat{n}^d{}_{NS} + \tilde{n}_{NS}$ | |
| 19 | $V_1 01$ | $E_1 42$ | $\dot{n}_{NS} := F_{NS,AS} \overset{AS}{\star} \text{Stack}\left(\hat{n}^c{}_{AS}, \hat{n}^{c,controlled}{}_{AS}\right)$ | |
| 18 | $V_2 8$ | $E_1 5$ | $v_{xN} := \frac{\partial r_{xN}}{\partial t}$ | |
| 17 | $V_1 9$ | $E_1 36$ | $\mu_{NS} := (R_N \,.\, T_N) \odot ln(\xi_{NS})$ | |
| 16 | $V_1 9$ | $E_8$ | $\mu_{NS} := \frac{\partial U_N}{\partial n_{NS}}$ | |
| 15 | $V_5 8$ | $E_3 7$ | $m_N := m_N$ | |
| 14 | $V_1 6$ | $E_8 6$ | $n_{NS} := \int_{t^o}^{t^e} \dot{n}_{NS} \; dt + n^o{}_{NS}$ | |

*Continued on next page*

| no | var | equ | quations | token |
|---|---|---|---|---|
| 13 | $V_4 8$ | $E_2 7$ | $k^c_{xN} := \left(\lambda_S \overset{S \in NS}{\star} (\mu_{NS})^{-1}\right) . (V_N)^{-1} . \frac{\partial U_N}{\partial p_N} . v_{xN}$ | |
| 12 | $V_5 9$ | $E_3 8$ | $\rho_N := m_N . (V_N)^{-1}$ | |
| 11 | $V_9 7$ | $E_7 2$ | $d_A := \text{sign}\left(F_{N,A} \overset{N}{\star} p_N\right)$ | |
| 10 | $V_6 6$ | $E_4 4$ | $c_{NS} := (V_N)^{-1} \odot n_{NS}$ | |
| 9 | $V_4$ | $E_3$ | $0.5 := \text{Instantiate}(\#, \#)$ | |
| 8 | $V_8 1$ | $E_5 8$ | $k^c_{xN} := k^c_{xN}$ | |
| 7 | $V_7 4$ | $E_5 1$ | $\rho_N := \rho_N$ | |
| 6 | $V_7 1$ | $E_4 8$ | $A_{yzN} := r_{yN} . r_{zN}$ | |
| 5 | $V_1 7$ | $E_6$ | $p_N := \left(-\frac{\partial U_N}{\partial V_N}\right)$ | |
| 4 | $V_9 8$ | $E_7 3$ | $c_{AS} := (0.5 . (F_{NS,AS} - d_A \odot \lvert F_{NS,AS} \rvert)) \overset{NS}{\star} c_{NS}$ | |
| 3 | $V_9 2$ | $E_6 7$ | $\hat{V}_A := (\rho_N)^{-1} . k^c_{xN} . A_{yzN} . D_{N,A} \overset{N}{\star} p_N$ | |
| 2 | $V_9 2$ | $E_1 40$ | $\hat{V}_A := \text{Instantiate}(\hat{V}_A, \#)$ | |
| 1 | $V_9 9$ | $E_7 4$ | $\hat{n}^c{}_{AS} := \hat{V}_A \odot c_{AS}$ | |
| 0 | $V_1 00$ | $E_7 5$ | $\hat{n}^c{}_{NS} := F_{NS,AS} \overset{AS}{\star} \hat{n}^c{}_{AS}$ | |