

1	$a1: T$	assumption
2	$h1: \forall x:T, x \in [a1+3, a1+37] \rightarrow P x$	assumption
3	$3 \leq 37$	lin_solve
4	$\forall x:T, x \in [a1+3, a1+37] \rightarrow P x$	assumption
5	$3 \leq 37 \wedge (\forall x:T, x \in [a1+3, a1+37] \rightarrow P x)$	$\wedge i$ 3,4
6	$3 \leq 7 \wedge (7 \leq 37 \wedge 7 \leq 7) \rightarrow \forall y:T, y \in [a1+7, a1+7] \rightarrow P y$	apply[Lemma2] 5
7	$3 \leq 7$	lin_solve
8	$7 \leq 37$	lin_solve
9	$7 \leq 7$	lin_solve
10	$7 \leq 37 \wedge 7 \leq 7$	$\wedge i$ 8,9
11	$3 \leq 7 \wedge (7 \leq 37 \wedge 7 \leq 7)$	$\wedge i$ 7,10
12	$\forall y:T, y \in [a1+7, a1+7] \rightarrow P y$	$\rightarrow e$ 6,11
13	$z1: T$	assumption
14	$h2: z1 \in (a1+9, a1+12)$	assumption
15	$3 \leq 37$	lin_solve
16	$\forall x:T, x \in [a1+3, a1+37] \rightarrow P x$	assumption
17	$3 \leq 37 \wedge (\forall x:T, x \in [a1+3, a1+37] \rightarrow P x)$	$\wedge i$ 15,16
18	$3 \leq 9 \wedge (12 \leq 37 \wedge 9 \leq 12) \rightarrow \forall z:T, z \in [a1+9, a1+12] \rightarrow P z$	apply[Lemma2] 17
19	$3 \leq 9$	lin_solve
20	$12 \leq 37$	lin_solve
21	$9 \leq 12$	lin_solve
22	$12 \leq 37 \wedge 9 \leq 12$	$\wedge i$ 20,21
23	$3 \leq 9 \wedge (12 \leq 37 \wedge 9 \leq 12)$	$\wedge i$ 19,22
24	$\forall z:T, z \in [a1+9, a1+12] \rightarrow P z$	$\rightarrow e$ 18,23
25	$z1 \in [a1+9, a1+12] \rightarrow P z1$	$\forall e$ 24
26	$h3: a1+9 < z1$	assumption
27	$a1+9 \leq z1$	lin_solve
28	$a1+9 < z1 \rightarrow a1+9 \leq z1$	$\rightarrow i$ 26-27
29	$a1+9 < z1 \wedge z1 < a1+12$	assumption
30	$a1+9 < z1$	$\wedge e_1$ 29
31	$a1+9 \leq z1$	$\rightarrow e$ 28,30
32	$h4: z1 < a1+12$	assumption
33	$z1 \leq a1+12$	lin_solve
34	$z1 < a1+12 \rightarrow z1 \leq a1+12$	$\rightarrow i$ 32-33
35	$a1+9 < z1 \wedge z1 < a1+12$	assumption
36	$z1 < a1+12$	$\wedge e_2$ 35
37	$z1 \leq a1+12$	$\rightarrow e$ 34,36
38	$a1+9 \leq z1 \wedge z1 \leq a1+12$	$\wedge i$ 31,37
39	$z1 \in [a1+9, a1+12]$	interval 38
40	$P z1$	$\rightarrow e$ 25,39
41	$z1 \in (a1+9, a1+12) \rightarrow P z1$	$\rightarrow i$ 14-40
42	$\forall z:T, z \in (a1+9, a1+12) \rightarrow P z$	$\forall i$ 13-41
43	$(\forall y:T, y \in [a1+7, a1+7] \rightarrow P y) \wedge (\forall z:T, z \in (a1+9, a1+12) \rightarrow P z)$	$\wedge i$ 12,42
44	$(\forall x:T, x \in [a1+3, a1+37] \rightarrow P x) \rightarrow (\forall y:T, y \in [a1+7, a1+7] \rightarrow P y) \wedge (\forall z:T, z \in (a1+9, a1+12) \rightarrow P z)$	$\rightarrow i$ 2-43
45	$\forall a:T, (\forall x:T, x \in [a+3, a+37] \rightarrow P x) \rightarrow (\forall y:T, y \in [a+7, a+7] \rightarrow P y) \wedge (\forall z:T, z \in (a+9, a+12) \rightarrow P z)$	$\forall i$ 1-44