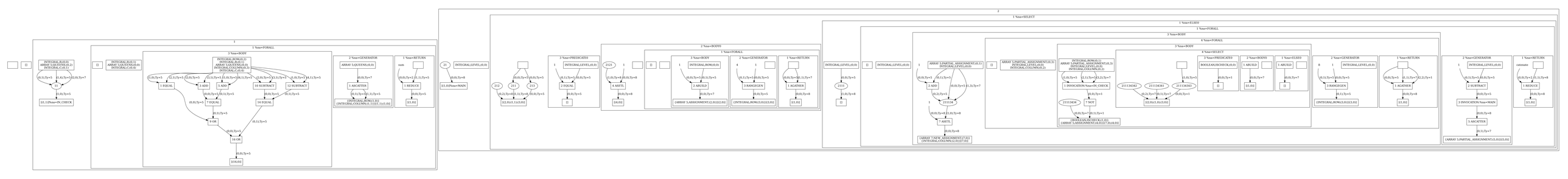

2
1 %na=SELECT
1 %na=ELSE0
1 %na=FORALL
3 %na=BODY
4 %na=FORALL
3 %na=BODY
4 %na=SELECT
3 %na=PREDICATE0
2 %na=BODY0
1 %na=ELSE0
2 %na=GENERATOR
1 %na=RETURN
[]
1
INTEGRAL;R;(0,0)
ARRAY 5;QUEENS;(0,2)
INTEGRAL;C;(0,1)
(0,1),Ty=5
(1,4),Ty=5
(2,0),Ty=7
11
(1,0),Ty=5
[(1,1)]%na=IN_CHECK
1 %na=FORALL
[]
INTEGRAL;R;(0,1)
ARRAY 5;QUEENS;(0,0)
INTEGRAL;C;(0,4)
3 %na=BODY
INTEGRAL;ROW;(0,2)
INTEGRAL;R;(0,1)
ARRAY 5;QUEENS;(0,0)
INTEGRAL;COLUMN;(0,3)
INTEGRAL;C;(0,4)
(1,0),Ty=5
(2,1),Ty=5
(2,0),Ty=5
(3,1),Ty=5
(1,0),Ty=5
(4,1),Ty=5
(2,0),Ty=5
(3,1),Ty=5
(1,0),Ty=5
(4,1),Ty=5
1 EQUAL
3 ADD
5 ADD
10 SUBTRACT
12 SUBTRACT
(0,0),Ty=5
(0,1),Ty=5
(0,0),Ty=5
(0,1),Ty=5
(0,0),Ty=5
7 EQUAL
14 EQUAL
(0,1),Ty=5
9 OR
(0,1),Ty=5
(0,0),Ty=5
16 OR
(0,0),Ty=5
[(16,0)]
2 %na=GENERATOR
ARRAY 5;QUEENS;(0,0)
(0,0),Ty=7
1 ASCATTER
(0,1),Ty=5
(1,1),Ty=5
{INTEGRAL;ROW;(1,0)}
{INTEGRAL;COLUMN;(1,1)}[(1,1);(1,0)]
1 %na=RETURN
sum
(0,0),Ty=2
(1,1),Ty=5
1 REDUCE
(0,0),Ty=5
[(1,0)]
21
INTEGRAL;LEVEL;(0,0)
(0,0),Ty=8
[(1,0)]%na=MAIN
(0,0),Ty=5
(0,0),Ty=5
212
211
213
(0,2),Ty=8
(1,1),Ty=8
(0,0),Ty=5
[(2,0);(1,1);(3,0)]
3 %na=PREDICATE0
1
INTEGRAL;LEVEL;(0,0)
(0,1),Ty=5
(0,0),Ty=5
2 EQUAL
(0,0),Ty=5
[]
2 %na=BODY0
2121
1
(1,0),Ty=8
(0,0),Ty=8
4 ASETL
(0,0),Ty=8
[(4,0)]
1 %na=FORALL
[]
3 %na=BODY
1
INTEGRAL;ROW;(0,0)
(0,0),Ty=5
(0,1),Ty=5
2 ABUILD
(0,0),Ty=7
{ARRAY 5;ASSIGNMENT;(2,0)}[(2,0)]
2 %na=GENERATOR
4
1
(0,1),Ty=5
(0,0),Ty=5
3 RANGEGEN
(0,0),Ty=5
{INTEGRAL;ROW;(3,0)}[(3,0)]
1 %na=RETURN
(0,0),Ty=5
(1,1),Ty=7
1 AGATHER
(0,0),Ty=8
[(1,0)]
INTEGRAL;LEVEL;(0,0)
(0,0),Ty=5
2111
(1,0),Ty=8
[]
[]
INTEGRAL;LEVEL;(0,0)
1
ARRAY 5;PARTIAL_ASSIGNMENT;(0,1)
INTEGRAL;LEVEL;(0,0)
(0,0),Ty=5
(0,1),Ty=5
(0,0),Ty=5
(1,3),Ty=7
2 ADD
(0,2),Ty=5
211134
1
(0,0),Ty=8
(1,0),Ty=8
7 ASETL
(0,0),Ty=8
{ARRAY 7;NEW_ASSIGNMENT;(7,0)}
{INTEGRAL;COLUMN;(2,0)}[(7,0)]
[]
ARRAY 5;PARTIAL_ASSIGNMENT;(0,3)
INTEGRAL;LEVEL;(0,0)
INTEGRAL;COLUMN;(0,2)
INTEGRAL;ROW;(0,1)
ARRAY 5;PARTIAL_ASSIGNMENT;(0,3)
INTEGRAL;LEVEL;(0,0)
INTEGRAL;COLUMN;(0,2)
(1,0),Ty=5
(2,1),Ty=5
(3,2),Ty=7
1 INVOCATION:%na=IN_CHECK
(0,0),Ty=1
21113434
7 NOT
(0,0),Ty=7
(0,1),Ty=1
{BOOLEAN;ISCHECK;(1,0)}
{ARRAY 5;ASSIGNMENT;(4,0)}[(7,0);(4,0)]
(1,0),Ty=5
211134342
211134341
211134343
(0,2),Ty=7
(0,1),Ty=7
(0,0),Ty=1
[(2,0);(1,0);(3,0)]
BOOLEAN;ISCHECK;(0,0)
(0,0),Ty=1
[]
1 ABUILD
(0,0),Ty=7
[(1,0)]
1 ABUILD
(0,0),Ty=7
[]
8
1
INTEGRAL;LEVEL;(0,0)
(0,1),Ty=5
(0,0),Ty=5
3 RANGEGEN
(0,1),Ty=5
{INTEGRAL;ROW;(3,0)}[(3,0)]
(0,0),Ty=5
(1,1),Ty=7
(2,2),Ty=1
1 AGATHER
(0,0),Ty=8
[(1,0)]
1
INTEGRAL;LEVEL;(0,0)
(0,1),Ty=5
(0,0),Ty=5
2 SUBTRACT
(0,0),Ty=5
3 INVOCATION:%na=MAIN
(0,0),Ty=8
5 ASCATTER
(0,1),Ty=7
{ARRAY 5;PARTIAL_ASSIGNMENT;(5,0)}[(5,0)]
catenate
(0,0),Ty=2
(1,1),Ty=8
1 REDUCE
(0,0),Ty=8
[(1,0)]