le(2, 4), upto(3, 4, v_{34}), multiply(2, 2, v_{31}), squares(v_{34} , v_{32}), add(v_{31} , 1, v_{33}), sum1(v_{32} , v_{33} , v_{0}) [$v_{20} \rightarrow 2$, $v_{21} \rightarrow v_{34}$] le(1, 3), upto(3, 4, v_{34}), multiply(2, 2, v_{31}), squares(v_{34} , v_{32}), add(v_{31} , 1, v_{33}), sum1(v_{32} , v_{33} , v_{0}) [$v_{20} \rightarrow 2$, $v_{21} \rightarrow v_{34}$, $v_{35} \rightarrow 1$, $v_{36} \rightarrow 3$] le(0, 2), upto(3, 4, v_{34}), multiply(2, 2, v_{31}), squares(v_{34} , v_{32}), add(v_{31} , 1, v_{33}), sum1(v_{32} , v_{33} , v_{0}) [$v_{20} \rightarrow 2$, $v_{21} \rightarrow v_{34}$, $v_{35} \rightarrow 1$, $v_{36} \rightarrow 3$, $v_{37} \rightarrow 0$, $v_{38} \rightarrow 2$] le(3, 4), upto(4, 4, v_{41}), multiply(2, 2, v_{31}), squares(3 : v_{41} , v_{32}), add(v_{31} , 1, v_{33}), sum1(v_{32} , v_{33} , v_{0}) [$v_{20} \rightarrow 2$, $v_{21} \rightarrow v_{34}$, $v_{34} \rightarrow 3$: v_{41} , $v_{35} \rightarrow 1$, $v_{36} \rightarrow 3$, $v_{37} \rightarrow 0$, $v_{38} \rightarrow 2$] le(2, 3), upto(4, 4, v_{41}), multiply(2, 2, v_{31}), squares(3 : v_{41} , v_{32}), add(v_{31} , 1, v_{33}), sum1(v_{32} , v_{33} , v_{0}) [$v_{20} \rightarrow 2$, $v_{21} \rightarrow v_{34}$, $v_{34} \rightarrow 3$: v_{41} , $v_{35} \rightarrow 1$, $v_{36} \rightarrow 3$, $v_{37} \rightarrow 0$, $v_{38} \rightarrow 2$, $v_{42} \rightarrow 2$, $v_{43} \rightarrow 3$] $\begin{array}{|l|l|} \hline & le(1,2), upto(4,4,v_{41}), multiply(2,2,v_{31}), squares(3:v_{41},v_{32}), add(v_{31},1,v_{33}), sum1(v_{32},v_{33},v_{0}) \\ \hline [v_{20} \rightarrow 2, v_{21} \rightarrow v_{34}, v_{34} \rightarrow 3:v_{41}, v_{35} \rightarrow 1, v_{36} \rightarrow 3, v_{37} \rightarrow 0, v_{38} \rightarrow 2, v_{42} \rightarrow 2, v_{43} \rightarrow 3, v_{44} \rightarrow 1, v_{45} \rightarrow 2] \\ \hline \end{array}$ $\begin{array}{c} C \\ \text{upto}(4,\,4,\,v_{41}),\,\,\text{multiply}(2,\,2,\,v_{31}),\,\,\text{squares}(3:v_{41},\,v_{32}),\,\,\text{add}(v_{31},\,1,\,v_{33}),\,\,\text{sum}\,1(v_{32},\,v_{33},\,v_{0}) \\ [\,v_{20}\rightarrow 2,\,v_{21}\rightarrow v_{34},\,v_{34}\rightarrow 3:v_{41},\,v_{35}\rightarrow 1,\,v_{36}\rightarrow 3,\,v_{37}\rightarrow 0,\,v_{38}\rightarrow 2,\,v_{42}\rightarrow 2,\,v_{43}\rightarrow 3,\,v_{44}\rightarrow 1,\,v_{45}\rightarrow 2,\,v_{46}\rightarrow 0,\,v_{47}\rightarrow 1\,\,] \end{array}$ $\begin{array}{c} C \\ \text{upto}(4,\,4,\,v_{41}),\,\text{add}(2,\,v_{51},\,v_{31}),\,\text{multiply}(2,\,1,\,v_{51}),\,\text{squares}(3:v_{41},\,v_{32}),\,\text{add}(v_{31},\,1,\,v_{33}),\,\text{sum}\,1(v_{32},\,v_{33},\,v_{0}) \\ [\,v_{20}\rightarrow 2,\,v_{21}\rightarrow v_{34},\,v_{34}\rightarrow 3:v_{41},\,v_{35}\rightarrow 1,\,v_{36}\rightarrow 3,\,v_{37}\rightarrow 0,\,v_{38}\rightarrow 2,\,v_{42}\rightarrow 2,\,v_{43}\rightarrow 3,\,v_{44}\rightarrow 1,\,v_{45}\rightarrow 2,\,v_{46}\rightarrow 0,\,v_{47}\rightarrow 1,\,v_{50}\rightarrow 1\,\,] \end{array}$ $\begin{array}{c} & \text{upto}(4,\,4,\,v_{41}),\,\text{add}(1,\,v_{51},\,v_{53}),\,\text{multiply}(2,\,1,\,v_{51}),\,\text{squares}(3:v_{41},\,v_{32}),\,\text{add}((1+v_{53}),\,1,\,v_{33}),\,\text{sum}\,1(v_{32},\,v_{33},\,v_{0}) \\ [\,v_{20}\rightarrow 2,\,v_{21}\rightarrow v_{34},\,v_{31}\rightarrow (1+v_{53}),\,v_{34}\rightarrow 3:v_{41},\,v_{35}\rightarrow 1,\,v_{36}\rightarrow 3,\,v_{37}\rightarrow 0,\,v_{38}\rightarrow 2,\,v_{42}\rightarrow 2,\,v_{43}\rightarrow 3,\,v_{44}\rightarrow 1,\,v_{45}\rightarrow 2,\,v_{46}\rightarrow 0,\,v_{47}\rightarrow 1,\,v_{50}\rightarrow 1,\,v_{52}\rightarrow 1\,\,] \end{array}$ $\begin{array}{c} \text{upto}(4,\,4,\,v_{41}),\,\,\text{multiply}(2,\,0,\,v_{63}),\,\,\text{squares}(3:v_{41},\,v_{32}),\,\,\text{add}((4+v_{63}),\,1,\,v_{33}),\,\,\text{sum}\,1(v_{32},\,v_{33},\,v_{0}) \\ \text{[}\,v_{20}\rightarrow2,\,v_{21}\rightarrow v_{34},\,v_{31}\rightarrow(1+v_{53}),\,v_{34}\rightarrow3:v_{41},\,v_{35}\rightarrow1,\,v_{36}\rightarrow3,\,v_{37}\rightarrow0,\,v_{38}\rightarrow2,\,v_{42}\rightarrow2,\,v_{43}\rightarrow3,\,v_{44}\rightarrow1,\,v_{45}\rightarrow2,\,v_{46}\rightarrow0,\,v_{47}\rightarrow1,\,v_{50}\rightarrow1,\,v_{51}\rightarrow v_{55},\,v_{52}\rightarrow1,\,v_{53}\rightarrow(1+v_{51}),\,v_{58}\rightarrow0,\,v_{59}\rightarrow v_{63},\,v_{60}\rightarrow1,\,v_{61}\rightarrow(1+v_{63}),\,v_{62}\rightarrow0\,] \end{array}$ $\begin{array}{c} \text{upto}(4,\,4,\,v_{69}),\,\text{add}(0,\,v_{83},\,v_{89}),\,\text{multiply}(3,\,1,\,v_{83}),\,\text{squares}(v_{69},\,v_{71}),\,\text{add}(4,\,1,\,v_{33}),\,\text{sum}1((6+v_{89}):v_{71},\,v_{33},\,v_{0}) \\ [\,v_{20}\rightarrow2,\,v_{21}\rightarrow v_{34},\,v_{31}\rightarrow(1+v_{53}),\,v_{32}\rightarrow v_{70}:v_{71},\,v_{34}\rightarrow3:v_{41},\,v_{35}\rightarrow1,\,v_{36}\rightarrow3,\,v_{37}\rightarrow0,\,v_{38}\rightarrow2,\,v_{41}\rightarrow v_{69},\,v_{42}\rightarrow2,\,v_{43}\rightarrow3,\,v_{44}\rightarrow1,\,v_{45}\rightarrow2,\,v_{46}\rightarrow0,\,v_{47}\rightarrow1,\,v_{50}\rightarrow1,\,v_{51}\rightarrow v_{55},\,v_{52}\rightarrow1,\,v_{53}\rightarrow(1+v_{77}),\,v_{76}\rightarrow1,\,v_{77}\rightarrow1,\,v_{77}\rightarrow1,\,v_{$