Unfold le $((1 + v_{144}))$ 3, Memo upto $((3 + v_{144}))$ 4 v_{157} , Unfold multiply $((2 + v_{144}))$ $((2 + v_{144}))$ v_{149} , Unfold squares v_{157} v_{151} , Unfold add v_{149} $((1 + v_{153}))$ v_{154} , Unfold sum1 v_{151} v_{154} v_{0} [$v_{145} \rightarrow (2 + v_{144})$, $v_{146} \rightarrow v_{157}$, $v_{158} \rightarrow (1 + v_{144})$, $v_{159} \rightarrow 3$] Unfold le v_{160} 2, Memo upto $((3 + v_{160}))$ 4 v_{157} , Unfold multiply $((2 + v_{160}))$ $((2 + v_{160}))$ v_{149} , Unfold squares v_{157} v_{151} , Unfold add v_{149} $((1 + v_{153}))$ v_{154} , Unfold sum1 v_{151} v_{154} v_{0} $[v_{144} \rightarrow v_{160}, v_{145} \rightarrow (2 + v_{144}), v_{146} \rightarrow v_{157}, v_{158} \rightarrow (1 + v_{144}), v_{159} \rightarrow 3, v_{161} \rightarrow 2]$ Unfold le 3 4, Memo upto 4 4 v_{164} , Unfold multiply 2 2 v_{149} , Unfold squares (3 : v_{164}) v_{151} , Unfold add v_{149} ((1 + v_{153})) v_{154} , Unfold squares v_{157} v_{151} , Unfold add v_{149} ((1 + v_{153})) v_{154} , Unfold squares v_{157} v_{151} , Unfold add v_{149} ((1 + v_{153})) v_{154} , Unfold squares v_{157} v_{151} , Unfold add v_{149} ((1 + v_{153})) v_{154} , Unfold squares v_{157} v_{151} , Unfold add v_{149} ((1 + v_{153})) v_{154} , Unfold squares v_{157} v_{154} v_{154} v_{154} v_{155} v_{154} v_{155} $v_$ Unfold le 2 3, Memo upto 4 4 v_{164} , Unfold multiply 2 2 v_{149} , Unfold squares (3 : v_{164}) v_{151} , Unfold sum1 v_{151} v_{154} v_{0} [$v_{144} \rightarrow v_{160}$, $v_{145} \rightarrow (2 + v_{144})$, $v_{146} \rightarrow v_{157}$, $v_{157} \rightarrow 3$: v_{164} , v_{157} , $v_{165} \rightarrow 2$ Unfold le 1 2, Memo upto 4 4 v_{164} , Unfold multiply 2 2 v_{149} , Unfold squares (3 : v_{164}) v_{151} , Unfold squares (3 : v_{164}) v_{151} , Unfold add ((1 + v_{162})) v_{165} , Unfold squares v_{157} , v_{151} , Unfold add ((1 + v_{162})) v_{165} , Unfold squares v_{157} , v_{151} , Unfold add ((1 + v_{162})) v_{165} , Unfold squares v_{157} , v_{151} , Unfold add ((1 + v_{162})) v_{165} , v_{160} Unfold le 0 1, Memo upto 4 4 v_{164} , Unfold multiply 2 2 v_{149} , Unfold squares (3 : v_{164}) v_{151} , Unfold squares v_{157} v_{154} v_{0} [$v_{144} \rightarrow v_{160}$, $v_{145} \rightarrow (2 + v_{144})$, $v_{146} \rightarrow v_{157}$, $v_{157} \rightarrow 3$: $v_{164} \rightarrow v_{165}$, v_{157} , $v_{168} \rightarrow 2$, $v_{169} \rightarrow 0$, $\begin{bmatrix} \text{Memo upto 4 4 } v_{164}, \text{Unfold multiply 2 2 } v_{149}, \text{Unfold squares (3: } v_{151}, \text{Unfold sdd } ((3+v_{170})) \text{ } v_{154}, \text{Unfold sdd }$ Unfold le v_{170} 1, Memo upto $((4+v_{170}))$ 4 v_{157} , Unfold add v_{170} ($(1+v_{175}))$ v_{171} , Unfold add $((2+v_{170}))$ v_{173} v_{175} , Unfold multiply $((3+v_{170}))$ $((1+v_{170}))$ v_{173} , Unfold squares v_{157} v_{151} , Unfold add $((3+v_{171}))$ $((1+v_{153}))$ v_{154} , Unfold sum 1 v_{151} v_{154} v_{0} [$v_{144} \rightarrow v_{160}$, $v_{145} \rightarrow (2+v_{144})$, $v_{146} \rightarrow v_{157}$, $v_{149} \rightarrow (1+v_{167})$, $v_{158} \rightarrow (1+v_{144})$, $v_{159} \rightarrow 3$, $v_{160} \rightarrow (1+v_{162})$, $v_{161} \rightarrow 2$, $v_{162} \rightarrow v_{170}$, $v_{163} \rightarrow 1$, $v_{164} \rightarrow (2+v_{162})$, $v_{165} \rightarrow (1+v_{175})$, $v_{166} \rightarrow (2+v_{162})$, $v_{167} \rightarrow (1+v_{162})$, $v_{169} \rightarrow (1+v_{171})$, $v_{172} \rightarrow (1+v_{170})$, $v_{174} \rightarrow (2+v_{170})$] Unfold le v_{186} 1, Memo upto ((4 + v_{186})) v_{186} v_{181} , Unfold add v_{186} ((3 + v_{193})) v_{192} , Unfold add v_{186} ((3 + v_{193})) v_{193} , Unfold add v_{186} (($\text{Memo upto 4 4 v_{192}, Unfold add 3 v_{196} v_{193}, Unfold multiply 3 2 v_{194}, Unfold add 4 $((1+v_{153}))$ v_{154}, Unfold sum1 $(v_{193}:v_{194})$ v_{154} v_{0} \\ [v_{144} \rightarrow v_{160}, v_{145} \rightarrow (2+v_{144}), v_{146} \rightarrow v_{157}, v_{149} \rightarrow (1+v_{176}), v_{151} \rightarrow v_{193}:v_{194}, v_{157} \rightarrow 3: v_{164}, v_{158} \rightarrow (1+v_{144}), v_{159} \rightarrow 3, v_{160} \rightarrow 0, v_{161} \rightarrow 2, v_{164} \rightarrow v_{178}), v_{175} \rightarrow 1, v_{176} \rightarrow (1+v_{178}), v_{177} \rightarrow 0, v_{178} \rightarrow (1+v_{184}), v_{181} \rightarrow 0, v_{182} \rightarrow v_{186}, v_{183} \rightarrow 1, v_{184} \rightarrow (1+v_{186}), v_{185} \rightarrow 0, v_{186} \rightarrow 0, v_{191} \rightarrow 3, v_{195} \rightarrow 2]$ $\text{Memo upto 4 4 v_{192}, Unfold add 2 v_{196} v_{198}, Unfold add 2 v_{196}, v_{194}, v_{196}, v_{199}, v_{194}, v_{196}, v_{199}, v_{194}, v_{199}, v_{199},$ $\text{Memo upto 4 4 v_{192}, Unfold add 1 v_{196} v_{200}, Unfold add 1 v_{196} v_{200}, Unfold add 4 $((1+v_{153}))$ v_{154}, v_{160} \rightarrow $(2+v_{144})$, $v_{145} \rightarrow (2+v_{144})$, $v_{146} \rightarrow v_{157}$, $v_{149} \rightarrow (1+v_{176})$, $v_{157} \rightarrow 3$: v_{164}, $v_{157} \rightarrow 3$: v_{164}, $v_{159} \rightarrow 3$, $v_{160} \rightarrow 0$, $v_{161} \rightarrow 2$, $v_{164} \rightarrow v_{192}$, $v_{165} \rightarrow 2$, $v_{166} \rightarrow 3$, $v_{167} \rightarrow 1$, $v_{176} \rightarrow (1+v_{186})$, $v_{185} \rightarrow 0$, $v_{186} \rightarrow 0$, $v_{193} \rightarrow (1+v_{198})$, $v_{195} \rightarrow 2$, $v_{196} \rightarrow 0$, $v_{196} \rightarrow 0$, $v_{196} \rightarrow 0$, $v_{186} \rightarrow 0$, $v_{186} \rightarrow 0$, $v_{186} \rightarrow 0$, $v_{186} \rightarrow 0$, $v_{191} \rightarrow 3$, $v_{193} \rightarrow (1+v_{198})$, $v_{195} \rightarrow 2$, $v_{196} \rightarrow 0$, $v_{196} \rightarrow 0$ $\text{Memo upto } 44\,v_{192}, \text{Unfold add } 0\,v_{196}\,v_{202}, \text{Unfold multiply } 3\,2\,v_{194}, \text{Unfold squares } v_{192}\,v_{194}, \text{Unfold sdd } 4\,((1+v_{153}))\,v_{154}\,v_{0} \\ [\,v_{144} \rightarrow v_{160},\,v_{145} \rightarrow (2+v_{144}),\,v_{146} \rightarrow v_{157},\,v_{149} \rightarrow (1+v_{176}),\,v_{151} \rightarrow v_{193}\,:\,v_{194},\,v_{157} \rightarrow 3\,:\,v_{164},\,v_{159} \rightarrow 3,\,v_{160} \rightarrow 0,\,v_{161} \rightarrow 2,\,v_{164} \rightarrow v_{192},\,v_{165} \rightarrow 2,\,v_{166} \rightarrow 3,\,v_{167} \rightarrow 1,\,v_{176} \rightarrow (1+v_{178}),\,v_{177} \rightarrow 0,\,v_{178} \rightarrow (1+v_{198}),\,v_{195} \rightarrow 2,\,v_{196} \rightarrow 0,\,v_{196} \rightarrow 0,$ $\text{Memo upto } 4 \ v_{192}, \text{ Unfold multiply } 3 \ 2 \ v_{202}, \text{ Unfold multiply } 3 \ 2 \ v_{202}, \text{ Unfold multiply } 3 \ 2 \ v_{202}, \text{ Unfold squares } v_{192} \ v_{194}, \text{ } v_{154} \ v_{0} \\ [v_{144} \rightarrow v_{160}, v_{145} \rightarrow (2 + v_{144}), v_{146} \rightarrow v_{157}, v_{149} \rightarrow (1 + v_{178}), v_{154} \rightarrow (1 + v_{198}), v_{154} \rightarrow (1 + v_{198}), v_{154} \rightarrow (1 + v_{198}), v_{155} \rightarrow 2, v_{166} \rightarrow 3, v_{167} \rightarrow 1, v_{168} \rightarrow 2, v_{169} \rightarrow 0, v_{182} \rightarrow v_{186}, v_{183} \rightarrow 1, v_{184} \rightarrow (1 + v_{198}), v_{195} \rightarrow 2, v_{196} \rightarrow 0, v_{196$ $\text{Memo upto 4 4 v_{192}, Unfold add 3 v_{206} v_{202}, Unfold multiply 3 1 v_{206}, Unfold add 4 $((1+v_{153}))$ v_{154}, v_{160} dadd 4 $((1+v_{153}))$ v_{154}, v_{160} dadd 4 $((1+v_{153}))$ v_{154}, v_{160} dadd 3 v_{206}, v_{202}, Unfold multiply 3 1 v_{206}, Unfold addd 4 $((1+v_{153}))$ v_{154}, v_{160} dadd 4 $((1+v_{153}))$ v_{154 $\text{Memo upto 4 4 v_{192}, Unfold add 2 v_{206} v_{208}, Unfold add 2 v_{206} v_{208}, Unfold add 4 $((1+v_{153}))$ v_{154}, v_{160} dsum 1 $((4+v_{208}):v_{194})$ v_{154} v_{0} \\ [v_{144} \rightarrow v_{160}, v_{145} \rightarrow (2+v_{144}), v_{146} \rightarrow v_{157}, v_{149} \rightarrow (1+v_{176}), v_{151} \rightarrow v_{193}:v_{194}, v_{157} \rightarrow 3:v_{164}, v_{158} \rightarrow (1+v_{198}), v_{195} \rightarrow 2, v_{169} \rightarrow 0, v_{170} \rightarrow 1, v_{178} \rightarrow (1+v_{198}), v_{195} \rightarrow 2, v_{196} \rightarrow v_{202}, v_{197} \rightarrow 2, v_{198} \rightarrow (1+v_{209}), v_{199} \rightarrow 1, v_{200} \rightarrow (1+v_{209}), v_{201} \rightarrow 0, v_{185} \rightarrow 0, v_{186} \rightarrow 0, v_{191} \rightarrow 3, v_{193} \rightarrow (1+v_{198}), v_{195} \rightarrow 2, v_{196} \rightarrow 0, v_{191} \rightarrow 3, v_{193} \rightarrow (1+v_{198}), v_{195} \rightarrow 2, v_{196} \rightarrow 0, v_{191} \rightarrow 3, v_{193} \rightarrow (1+v_{198}), v_{195} \rightarrow 2, v_{196} \rightarrow 0, v_{191} \rightarrow 3, v_{196} \rightarrow 0, v_{191} \rightarrow 3, v_{193} \rightarrow (1+v_{198}), v_{195} \rightarrow 2, v_{196} \rightarrow 0, v_{191} \rightarrow 3, v_{193} \rightarrow (1+v_{198}), v_{195} \rightarrow 2, v_{196} \rightarrow 0, v_{191} \rightarrow 3, v_{193} \rightarrow (1+v_{198}), v_{195} \rightarrow 2, v_{196} \rightarrow 0, v_{191} \rightarrow 3, v_{193} \rightarrow (1+v_{198}), v_{195} \rightarrow 2, v_{196} \rightarrow 0, v_{195} \rightarrow 2$ $\text{Memo upto 4 4 v_{192}, Unfold add 1 v_{206} v_{210}, Unfold add 1 v_{206} v_{210}, Unfold add 4 $((1+v_{153}))$ v_{154}, v_{194}, v_{195}, v_{194}, v_{195}, v_{194}, v_{195}, v_{194}, v_{195}, v_{194}, v_{195}, v_{195}, v_{194}, v_{195}, v_{195}, v_{196}, v_{1 $\text{Memo upto 4 4 v_{192}, Unfold add 0 v_{206} v_{212}, Unfold add 0 v_{206} v_{212}, Unfold add 4 ((1 + $v_{153}))$ v_{154}, v_{160} \rightarrow (1 + $v_{120})$, v_{194}, v_{154} \rightarrow (1 + $v_{198})$, v_{155} \rightarrow (1 + $v_{198})$, $v_{155}$$ $\text{Memo upto 4 4 v_{192}, Unfold add 3 v_{216} v_{212}, Unfold add 4 $((1+v_{153}))$ v_{154}, Unfold sum 1 ((6+v_{212}): v_{194})$ v_{154} v_{0} \\ [v_{144} \rightarrow v_{160}, v_{145} \rightarrow (2+v_{144}), v_{145} \rightarrow (2+v_{144}), v_{146} \rightarrow v_{157}, v_{149} \rightarrow (1+v_{176}), v_{151} \rightarrow v_{193}: v_{194}, v_{157} \rightarrow 3: v_{164}, v_{159} \rightarrow 2, v_{169} \rightarrow 0, v_{179} \rightarrow 1, v_{179} \rightarrow (1+v_{198}), v_{195} \rightarrow 2, v_{196} \rightarrow 0, v_{179} \rightarrow 1, v_{179} \rightarrow (1+v_{198}), v_{195} \rightarrow 2, v_{196} \rightarrow 0, v_{179} \rightarrow 1, v_{179} \rightarrow (1+v_{198}), v_{195} \rightarrow 2, v_{196} \rightarrow 0, v_{191} \rightarrow 3, v_{193} \rightarrow (1+v_{198}), v_{195} \rightarrow 2, v_{196} \rightarrow 0, v_{191} \rightarrow 3, v_{193} \rightarrow (1+v_{198}), v_{195} \rightarrow 2, v_{196} \rightarrow 0, v_{191} \rightarrow 3, v_{193} \rightarrow (1+v_{198}), v_{195} \rightarrow 2, v_{196} \rightarrow 0, v_{191} \rightarrow 3, v_{193} \rightarrow (1+v_{198}), v_{195} \rightarrow 2, v_{196} \rightarrow 0, v_{191} \rightarrow 3, v_{193} \rightarrow (1+v_{198}), v_{195} \rightarrow 2, v_{196} \rightarrow 0, v_{191} \rightarrow 3, v_{193} \rightarrow (1+v_{198}), v_{195} \rightarrow 2, v_{196} \rightarrow 0, v_{191} \rightarrow 3, v_{193} \rightarrow (1+v_{198}), v_{195} \rightarrow 2, v_{196} \rightarrow 0, v_{191} \rightarrow 3, v_{193} \rightarrow (1+v_{198}), v_{195} \rightarrow 2, v_{196} \rightarrow 0, v_{191} \rightarrow 3, v_{195} \rightarrow 0, v_{1$ $\text{Memo upto 4 4 v_{192}, Unfold add 2 v_{216}, v_{194}, v_{195}, v_{194}, v_{195}, v_{194}, v_{195}, v_{194}, v_{195}, v_{194}, v_{195}, v_{194}, v_{195}, v_{195}, v_{194}, v_{195}, v_{194}, v_{195}, v_{194}, v_{195}, v_{194}, v_{195}, v_{195}, v_{194}, v_{195}, $$ $Memo upto 4 4 v_{192}, Unfold add 0 v_{216} v_{222}, Unfold add 4 ((1 + v_{153})) v_{154}, Unfold squares v_{192} v_{194}, Unfold sdu 4 ((1 + v_{153})) v_{154}, Unfold squares v_{192} v_{194}, V_{160} dsum 1 ((9 + v_{222}) : v_{194}) v_{154} v_0 \\ [v_{144} \rightarrow v_{160}, v_{145} \rightarrow (2 + v_{144}), v_{160} \rightarrow (2 + v_{160}), v_{160} \rightarrow (2 + v_{160}),$

 $\text{Memo upto } 4 \ v_{192}, \text{ Unfold multiply } 3 \ v_{222}, \text{ Unfold sum } ((9 + v_{222}) : v_{194}) \ v_{154} \ v_{0} \\ [v_{144} \rightarrow v_{160}, v_{145} \rightarrow (1 + v_{184}), v_{195} \rightarrow (1 + v_{120}), v_{194} \rightarrow (1 + v_{184}), v_{195} \rightarrow (1 + v_{210}), v_{205} \rightarrow (1 + v_{210}), v_{205} \rightarrow (1 + v_{210}), v_{205} \rightarrow (1 + v_{220}), v_{210} \rightarrow (1 + v_{210}), v_{205} \rightarrow (1 + v_{220}), v_{210} \rightarrow (1 + v_{210}), v_{205} \rightarrow (1 + v_{210}),$

 $\text{Memo upto 4 4 v_{192}, Unfold squares v_{192} v_{194}, Unfold squares v_{192} v_{194}, Unfold sum 1 (9:v_{194}) v_{154} v_{0} \\ \hline [v_{144} \rightarrow v_{160}, v_{145} \rightarrow (2+v_{144}), v_{160} \rightarrow (2+v_{144}), v_{160} \rightarrow (2+v_{144}), v_{160} \rightarrow (2+v_{144}), v_{160} \rightarrow (2+v_{164}), v_{160} \rightarrow (2$

 $\text{Memo upto } 44\,v_{192}, \text{ Unfold squares } v_{192}\,v_{194}, \text{ Unfold squares } v_{192}\,v_{194}, \text{ Unfold sum } (9:v_{194})\,(1+v_{228}))\,v_0\\ [v_{144}\rightarrow v_{160},v_{145}\rightarrow (2+v_{144}),v_{145}\rightarrow (2+v_{144}),v_{125}\rightarrow 0,v_{125}\rightarrow 1,v_{126}\rightarrow v_{122}),v_{211}\rightarrow 0,v_{123}\rightarrow 1,v_{126}\rightarrow 2,v_{164}\rightarrow v_{122}),v_{211}\rightarrow 0,v_{212}\rightarrow 0,v_{212}$