$\text{main} \Rightarrow^1 \text{take } 4\ (\bullet^1) \Rightarrow^4 1: \text{take } 3\ (\bullet^2) \Rightarrow^{24} 1:2: \text{take2}\ (\bullet^9)$

$\Rightarrow^{29} 1:2:3: \text{take1}\ (\bullet^{13}) \Rightarrow^{35} \underline{1:2:3:4: \text{take } 0\ (\bullet)}$

$(\bullet^1) \Rightarrow^2 \text{hamming} \Rightarrow^3 1:\ (\bullet^2)$

$(\bullet^2) \Rightarrow^5 \text{merge}\ (\bullet^5)\ \$ \ \underbrace{\text{merge}\ (\bullet^4)\quad (\bullet^3)}$

$$(\bullet^8)$$

$(\bullet^3) \Rightarrow^6 \text{hamming } 3 \Rightarrow^7 \text{map}\ (3*)\ \text{hamming}$

$\Rightarrow^8 \text{map}\ (3*)\ 1:\ (\bullet^6) \Rightarrow^9 (3*1): \text{map}\ (3*)\ (\bullet^6)$

$\Rightarrow^{10} 3: \text{map}\ (3*)\ (\bullet^6)$

$(\bullet^4) \Rightarrow^{11} \text{hamming } 2 \Rightarrow^{12} \text{map}\ (2*)\ \text{hamming}$

$\Rightarrow^{13} \text{map}\ (2*)\ 1:\ (\bullet^7) \Rightarrow^{14} (2*1): \text{map}\ (2*)\ (\bullet^7)$

$\Rightarrow^{15} 2: \text{map}\ (2*)\ (\bullet^7)$

$(\bullet^8) \Rightarrow^{16} \text{merge}\ (2: \text{map}\ (2*)\ (\bullet^7))\ (3: \text{map}\ (3*)\ (\bullet^6))$

$\Rightarrow^{17} 2: \underbrace{\text{merge}\ (\text{map}\ (2*)\ (\bullet^7))\ (3: \text{map}\ (3*)\ (\bullet^6))}$

$$(\bullet^{10})$$

$(\bullet^5)' \Rightarrow^{18} \text{hamming } 5 \Rightarrow^{19} \text{map}\ (5*)\ \text{hamming}$

$\Rightarrow^{20} \text{map}\ (5*)\ 1:\ (\bullet^9) \Rightarrow^{21} (5*1): \text{map}\ (5*)\ (\bullet^9)$

$\Rightarrow^{22} 5: \text{map}\ (5*)\ (\bullet^9)$

$(\bullet^2)\text{cont.}\quad \text{merge}\ (5: \text{map}\ (5*)\ (\bullet^9))\ (2: (\bullet^{10}))$

$\Rightarrow^{23} 2: \underbrace{\text{merge}\ (5: \text{map}\ (5*)(\bullet^9))\ (\bullet^{10})}$

$$(\bullet^{11})$$