

Terms $B_{\bar{N}}(2N - 1)$ through $B_{\bar{N}}(2N + 560)$ when $N \equiv 3 \pmod{7}$

When $N \equiv 3 \pmod{7}$ and $N \geq 72$, a pattern with 7 interleaved linear sequences lasts from index $N + 67$ through $2N - 2$. If $N \geq 4315$, there are 562 terms after this pattern ends. Below are calculations of all of these terms along with the necessary lower bound on N for each calculation to be valid. Record large N bounds exceeding 72 are presented in bold.

$$\begin{aligned}
 \mathbf{B}_{\bar{N}}(\mathbf{2N} - \mathbf{1}) &= B_{\bar{N}}(2N - 1 - B_{\bar{N}}(2N - 2)) + B_{\bar{N}}(2N - 1 - B_{\bar{N}}(2N - 3)) + B_{\bar{N}}(2N - 1 - B_{\bar{N}}(2N - 4)) \\
 &= B_{\bar{N}}(2N - 1 - (2N - 1)) + B_{\bar{N}}(2N - 1 - (N - 1)) + B_{\bar{N}}(2N - 1 - (N - 2)) \\
 &= B_{\bar{N}}(0) + B_{\bar{N}}(N) + B_{\bar{N}}(N + 1) = 0 + N + 6 = \mathbf{N} + \mathbf{6} \\
 &(N \geq \mathbf{71})
 \end{aligned}$$

$$\begin{aligned}
 \mathbf{B}_{\bar{N}}(\mathbf{2N}) &= B_{\bar{N}}(2N - B_{\bar{N}}(2N - 1)) + B_{\bar{N}}(2N - B_{\bar{N}}(2N - 2)) + B_{\bar{N}}(2N - B_{\bar{N}}(2N - 3)) \\
 &= B_{\bar{N}}(2N - (N + 6)) + B_{\bar{N}}(2N - (2N - 1)) + B_{\bar{N}}(2N - (N - 1)) \\
 &= B_{\bar{N}}(N - 6) + B_{\bar{N}}(1) + B_{\bar{N}}(N + 1) = (N - 6) + 1 + 6 = \mathbf{N} + \mathbf{1} \\
 &(\mathbf{N} \geq \mathbf{73})
 \end{aligned}$$

$$\begin{aligned}
 \mathbf{B}_{\bar{N}}(\mathbf{2N} + \mathbf{1}) &= B_{\bar{N}}(2N + 1 - B_{\bar{N}}(2N)) + B_{\bar{N}}(2N + 1 - B_{\bar{N}}(2N - 1)) + B_{\bar{N}}(2N + 1 - B_{\bar{N}}(2N - 2)) \\
 &= B_{\bar{N}}(2N + 1 - (N + 1)) + B_{\bar{N}}(2N + 1 - (N + 6)) + B_{\bar{N}}(2N + 1 - (2N - 1)) \\
 &= B_{\bar{N}}(N) + B_{\bar{N}}(N - 5) + B_{\bar{N}}(2) = N + (N - 5) + 2 = \mathbf{2N} - \mathbf{3} \\
 &(N \geq \mathbf{72})
 \end{aligned}$$

$$\begin{aligned}
 \mathbf{B}_{\bar{N}}(\mathbf{2N} + \mathbf{2}) &= B_{\bar{N}}(2N + 2 - B_{\bar{N}}(2N + 1)) + B_{\bar{N}}(2N + 2 - B_{\bar{N}}(2N)) + B_{\bar{N}}(2N + 2 - B_{\bar{N}}(2N - 1)) \\
 &= B_{\bar{N}}(2N + 2 - (2N - 3)) + B_{\bar{N}}(2N + 2 - (N + 1)) + B_{\bar{N}}(2N + 2 - (N + 6)) \\
 &= B_{\bar{N}}(5) + B_{\bar{N}}(N + 1) + B_{\bar{N}}(N - 4) = 5 + 6 + (N - 4) = \mathbf{N} + \mathbf{7} \\
 &(N \geq \mathbf{71})
 \end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 3) &= B_{\bar{N}}(2N + 3 - B_{\bar{N}}(2N + 2)) + B_{\bar{N}}(2N + 3 - B_{\bar{N}}(2N + 1)) + B_{\bar{N}}(2N + 3 - B_{\bar{N}}(2N)) \\
&= B_{\bar{N}}(2N + 3 - (N + 7)) + B_{\bar{N}}(2N + 3 - (2N - 3)) + B_{\bar{N}}(2N + 3 - (N + 1)) \\
&= B_{\bar{N}}(N - 4) + B_{\bar{N}}(6) + B_{\bar{N}}(N + 2) = (N - 4) + 6 + (N + 1) = \mathbf{2N} + \mathbf{3} \\
&(N \geq 7)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 4) &= B_{\bar{N}}(2N + 4 - B_{\bar{N}}(2N + 3)) + B_{\bar{N}}(2N + 4 - B_{\bar{N}}(2N + 2)) + B_{\bar{N}}(2N + 4 - B_{\bar{N}}(2N + 1)) \\
&= B_{\bar{N}}(2N + 4 - (2N + 3)) + B_{\bar{N}}(2N + 4 - (N + 7)) + B_{\bar{N}}(2N + 4 - (2N - 3)) \\
&= B_{\bar{N}}(1) + B_{\bar{N}}(N - 3) + B_{\bar{N}}(7) = 1 + (N - 3) + 7 = \mathbf{N} + \mathbf{5} \\
&(\mathbf{N} \geq \mathbf{75})
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 5) &= B_{\bar{N}}(2N + 5 - B_{\bar{N}}(2N + 4)) + B_{\bar{N}}(2N + 5 - B_{\bar{N}}(2N + 3)) + B_{\bar{N}}(2N + 5 - B_{\bar{N}}(2N + 2)) \\
&= B_{\bar{N}}(2N + 5 - (N + 5)) + B_{\bar{N}}(2N + 5 - (2N + 3)) + B_{\bar{N}}(2N + 5 - (N + 7)) \\
&= B_{\bar{N}}(N) + B_{\bar{N}}(2) + B_{\bar{N}}(N - 2) = N + 2 + (N - 2) = \mathbf{2N} \\
&(N \geq 74)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 6) &= B_{\bar{N}}(2N + 6 - B_{\bar{N}}(2N + 5)) + B_{\bar{N}}(2N + 6 - B_{\bar{N}}(2N + 4)) + B_{\bar{N}}(2N + 6 - B_{\bar{N}}(2N + 3)) \\
&= B_{\bar{N}}(2N + 6 - 2N) + B_{\bar{N}}(2N + 6 - (N + 5)) + B_{\bar{N}}(2N + 6 - (2N + 3)) \\
&= B_{\bar{N}}(6) + B_{\bar{N}}(N + 1) + B_{\bar{N}}(3) = 6 + 6 + 3 = \mathbf{15} \\
&(N \geq 73)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 7) &= B_{\bar{N}}(2N + 7 - B_{\bar{N}}(2N + 6)) + B_{\bar{N}}(2N + 7 - B_{\bar{N}}(2N + 5)) + B_{\bar{N}}(2N + 7 - B_{\bar{N}}(2N + 4)) \\
&= B_{\bar{N}}(2N + 7 - 15) + B_{\bar{N}}(2N + 7 - 2N) + B_{\bar{N}}(2N + 7 - (N + 5)) \\
&= B_{\bar{N}}(2N - 8) + B_{\bar{N}}(7) + B_{\bar{N}}(N + 2) = (2N - 6) + 7 + (N + 1) = \mathbf{3N} + \mathbf{2} \\
&(\mathbf{N} \geq \mathbf{77})
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 8) &= B_{\bar{N}}(2N + 8 - B_{\bar{N}}(2N + 7)) + B_{\bar{N}}(2N + 8 - B_{\bar{N}}(2N + 6)) + B_{\bar{N}}(2N + 8 - B_{\bar{N}}(2N + 5)) \\
&= B_{\bar{N}}(2N + 8 - (3N + 2)) + B_{\bar{N}}(2N + 8 - 15) + B_{\bar{N}}(2N + 8 - 2N) \\
&= B_{\bar{N}}(-N + 6) + B_{\bar{N}}(2N - 7) + B_{\bar{N}}(8) = 0 + 7 + 8 = \mathbf{15} \\
& (N \geq 76)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 9) &= B_{\bar{N}}(2N + 9 - B_{\bar{N}}(2N + 8)) + B_{\bar{N}}(2N + 9 - B_{\bar{N}}(2N + 7)) + B_{\bar{N}}(2N + 9 - B_{\bar{N}}(2N + 6)) \\
&= B_{\bar{N}}(2N + 9 - 15) + B_{\bar{N}}(2N + 9 - (3N + 2)) + B_{\bar{N}}(2N + 9 - 15) \\
&= B_{\bar{N}}(2N - 6) + B_{\bar{N}}(-N + 7) + B_{\bar{N}}(2N - 6) = \left(\frac{16N}{7} + \frac{295}{7}\right) + 0 + \left(\frac{16N}{7} + \frac{295}{7}\right) = \frac{32N}{7} + \frac{590}{7} \\
& (\mathbf{N} \geq 105)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 10) &= B_{\bar{N}}(2N + 10 - B_{\bar{N}}(2N + 9)) + B_{\bar{N}}(2N + 10 - B_{\bar{N}}(2N + 8)) + B_{\bar{N}}(2N + 10 - B_{\bar{N}}(2N + 7)) \\
&= B_{\bar{N}}\left(2N + 10 - \left(\frac{32N}{7} + \frac{590}{7}\right)\right) + B_{\bar{N}}(2N + 10 - 15) + B_{\bar{N}}(2N + 10 - (3N + 2)) \\
&= B_{\bar{N}}\left(-\frac{18N}{7} - \frac{520}{7}\right) + B_{\bar{N}}(2N - 5) + B_{\bar{N}}(-N + 8) = 0 + \left(\frac{15N}{7} - \frac{59}{7}\right) + 0 = \frac{15N}{7} - \frac{59}{7} \\
& (\mathbf{N} \geq 112)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 11) &= B_{\bar{N}}(2N + 11 - B_{\bar{N}}(2N + 10)) + B_{\bar{N}}(2N + 11 - B_{\bar{N}}(2N + 9)) + B_{\bar{N}}(2N + 11 - B_{\bar{N}}(2N + 8)) \\
&= B_{\bar{N}}\left(2N + 11 - \left(\frac{15N}{7} - \frac{59}{7}\right)\right) + B_{\bar{N}}\left(2N + 11 - \left(\frac{32N}{7} + \frac{590}{7}\right)\right) + B_{\bar{N}}(2N + 11 - 15) \\
&= B_{\bar{N}}\left(-\frac{N}{7} + \frac{136}{7}\right) + B_{\bar{N}}\left(-\frac{18N}{7} - \frac{513}{7}\right) + B_{\bar{N}}(2N - 4) = 0 + 0 + (N - 2) = \mathbf{N} - 2 \\
& (\mathbf{N} \geq 136)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + \mathbf{12}) &= B_{\bar{N}}(2N + 12 - B_{\bar{N}}(2N + 11)) + B_{\bar{N}}(2N + 12 - B_{\bar{N}}(2N + 10)) + B_{\bar{N}}(2N + 12 - B_{\bar{N}}(2N + 9)) \\
&= B_{\bar{N}}(2N + 12 - (N - 2)) + B_{\bar{N}}\left(2N + 12 - \left(\frac{15N}{7} - \frac{59}{7}\right)\right) + B_{\bar{N}}\left(2N + 12 - \left(\frac{32N}{7} + \frac{590}{7}\right)\right) \\
&= B_{\bar{N}}(N + 14) + B_{\bar{N}}\left(-\frac{N}{7} + \frac{143}{7}\right) + B_{\bar{N}}\left(-\frac{18N}{7} - \frac{506}{7}\right) = (N + 10) + 0 + 0 = \mathbf{N} + \mathbf{10} \\
&(\mathbf{N} \geq \mathbf{143})
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + \mathbf{13}) &= B_{\bar{N}}(2N + 13 - B_{\bar{N}}(2N + 12)) + B_{\bar{N}}(2N + 13 - B_{\bar{N}}(2N + 11)) + B_{\bar{N}}(2N + 13 - B_{\bar{N}}(2N + 10)) \\
&= B_{\bar{N}}(2N + 13 - (N + 10)) + B_{\bar{N}}(2N + 13 - (N - 2)) + B_{\bar{N}}\left(2N + 13 - \left(\frac{15N}{7} - \frac{59}{7}\right)\right) \\
&= B_{\bar{N}}(N + 3) + B_{\bar{N}}(N + 15) + B_{\bar{N}}\left(-\frac{N}{7} + \frac{150}{7}\right) = (N + 2) + (N + 11) + 0 = \mathbf{2N} + \mathbf{13} \\
&(\mathbf{N} \geq \mathbf{150})
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + \mathbf{14}) &= B_{\bar{N}}(2N + 14 - B_{\bar{N}}(2N + 13)) + B_{\bar{N}}(2N + 14 - B_{\bar{N}}(2N + 12)) + B_{\bar{N}}(2N + 14 - B_{\bar{N}}(2N + 11)) \\
&= B_{\bar{N}}(2N + 14 - (2N + 13)) + B_{\bar{N}}(2N + 14 - (N + 10)) + B_{\bar{N}}(2N + 14 - (N - 2)) \\
&= B_{\bar{N}}(1) + B_{\bar{N}}(N + 4) + B_{\bar{N}}(N + 16) = 1 + (N + 3) + 17 = \mathbf{N} + \mathbf{21} \\
&(N \geq 14)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + \mathbf{15}) &= B_{\bar{N}}(2N + 15 - B_{\bar{N}}(2N + 14)) + B_{\bar{N}}(2N + 15 - B_{\bar{N}}(2N + 13)) + B_{\bar{N}}(2N + 15 - B_{\bar{N}}(2N + 12)) \\
&= B_{\bar{N}}(2N + 15 - (N + 21)) + B_{\bar{N}}(2N + 15 - (2N + 13)) + B_{\bar{N}}(2N + 15 - (N + 10)) \\
&= B_{\bar{N}}(N - 6) + B_{\bar{N}}(2) + B_{\bar{N}}(N + 5) = (N - 6) + 2 + 9 = \mathbf{N} + \mathbf{5} \\
&(N \geq 15)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 16) &= B_{\bar{N}}(2N + 16 - B_{\bar{N}}(2N + 15)) + B_{\bar{N}}(2N + 16 - B_{\bar{N}}(2N + 14)) + B_{\bar{N}}(2N + 16 - B_{\bar{N}}(2N + 13)) \\
&= B_{\bar{N}}(2N + 16 - (N + 5)) + B_{\bar{N}}(2N + 16 - (N + 21)) + B_{\bar{N}}(2N + 16 - (2N + 13)) \\
&= B_{\bar{N}}(N + 11) + B_{\bar{N}}(N - 5) + B_{\bar{N}}(3) = (N + 8) + (N - 5) + 3 = \mathbf{2N} + \mathbf{6} \\
&(N \geq 16)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 17) &= B_{\bar{N}}(2N + 17 - B_{\bar{N}}(2N + 16)) + B_{\bar{N}}(2N + 17 - B_{\bar{N}}(2N + 15)) + B_{\bar{N}}(2N + 17 - B_{\bar{N}}(2N + 14)) \\
&= B_{\bar{N}}(2N + 17 - (2N + 6)) + B_{\bar{N}}(2N + 17 - (N + 5)) + B_{\bar{N}}(2N + 17 - (N + 21)) \\
&= B_{\bar{N}}(11) + B_{\bar{N}}(N + 12) + B_{\bar{N}}(N - 4) = 11 + (N + 9) + (N - 4) = \mathbf{2N} + \mathbf{16} \\
&(N \geq 13)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 18) &= B_{\bar{N}}(2N + 18 - B_{\bar{N}}(2N + 17)) + B_{\bar{N}}(2N + 18 - B_{\bar{N}}(2N + 16)) + B_{\bar{N}}(2N + 18 - B_{\bar{N}}(2N + 15)) \\
&= B_{\bar{N}}(2N + 18 - (2N + 16)) + B_{\bar{N}}(2N + 18 - (2N + 6)) + B_{\bar{N}}(2N + 18 - (N + 5)) \\
&= B_{\bar{N}}(2) + B_{\bar{N}}(12) + B_{\bar{N}}(N + 13) = 2 + 12 + 15 = \mathbf{29} \\
&(N \geq 14)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 19) &= B_{\bar{N}}(2N + 19 - B_{\bar{N}}(2N + 18)) + B_{\bar{N}}(2N + 19 - B_{\bar{N}}(2N + 17)) + B_{\bar{N}}(2N + 19 - B_{\bar{N}}(2N + 16)) \\
&= B_{\bar{N}}(2N + 19 - 29) + B_{\bar{N}}(2N + 19 - (2N + 16)) + B_{\bar{N}}(2N + 19 - (2N + 6)) \\
&= B_{\bar{N}}(2N - 10) + B_{\bar{N}}(3) + B_{\bar{N}}(13) = (N - 8) + 3 + 13 = \mathbf{N} + \mathbf{8} \\
&(N \geq 77)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 20) &= B_{\bar{N}}(2N + 20 - B_{\bar{N}}(2N + 19)) + B_{\bar{N}}(2N + 20 - B_{\bar{N}}(2N + 18)) + B_{\bar{N}}(2N + 20 - B_{\bar{N}}(2N + 17)) \\
&= B_{\bar{N}}(2N + 20 - (N + 8)) + B_{\bar{N}}(2N + 20 - 29) + B_{\bar{N}}(2N + 20 - (2N + 16)) \\
&= B_{\bar{N}}(N + 12) + B_{\bar{N}}(2N - 9) + B_{\bar{N}}(4) = (N + 9) + (2N - 8) + 4 = \mathbf{3N} + \mathbf{5} \\
&(N \geq 76)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(\mathbf{2N} + \mathbf{21}) &= B_{\bar{N}}(2N + 21 - B_{\bar{N}}(2N + 20)) + B_{\bar{N}}(2N + 21 - B_{\bar{N}}(2N + 19)) + B_{\bar{N}}(2N + 21 - B_{\bar{N}}(2N + 18)) \\
&= B_{\bar{N}}(2N + 21 - (3N + 5)) + B_{\bar{N}}(2N + 21 - (N + 8)) + B_{\bar{N}}(2N + 21 - 29) \\
&= B_{\bar{N}}(-N + 16) + B_{\bar{N}}(N + 13) + B_{\bar{N}}(2N - 8) = 0 + 15 + (2N - 6) = \mathbf{2N} + \mathbf{9} \\
&(N \geq 75)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(\mathbf{2N} + \mathbf{22}) &= B_{\bar{N}}(2N + 22 - B_{\bar{N}}(2N + 21)) + B_{\bar{N}}(2N + 22 - B_{\bar{N}}(2N + 20)) + B_{\bar{N}}(2N + 22 - B_{\bar{N}}(2N + 19)) \\
&= B_{\bar{N}}(2N + 22 - (2N + 9)) + B_{\bar{N}}(2N + 22 - (3N + 5)) + B_{\bar{N}}(2N + 22 - (N + 8)) \\
&= B_{\bar{N}}(13) + B_{\bar{N}}(-N + 17) + B_{\bar{N}}(N + 14) = 13 + 0 + (N + 10) = \mathbf{N} + \mathbf{23} \\
&(N \geq 22)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(\mathbf{2N} + \mathbf{23}) &= B_{\bar{N}}(2N + 23 - B_{\bar{N}}(2N + 22)) + B_{\bar{N}}(2N + 23 - B_{\bar{N}}(2N + 21)) + B_{\bar{N}}(2N + 23 - B_{\bar{N}}(2N + 20)) \\
&= B_{\bar{N}}(2N + 23 - (N + 23)) + B_{\bar{N}}(2N + 23 - (2N + 9)) + B_{\bar{N}}(2N + 23 - (3N + 5)) \\
&= B_{\bar{N}}(N) + B_{\bar{N}}(14) + B_{\bar{N}}(-N + 18) = N + 14 + 0 = \mathbf{N} + \mathbf{14} \\
&(N \geq 71)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(\mathbf{2N} + \mathbf{24}) &= B_{\bar{N}}(2N + 24 - B_{\bar{N}}(2N + 23)) + B_{\bar{N}}(2N + 24 - B_{\bar{N}}(2N + 22)) + B_{\bar{N}}(2N + 24 - B_{\bar{N}}(2N + 21)) \\
&= B_{\bar{N}}(2N + 24 - (N + 14)) + B_{\bar{N}}(2N + 24 - (N + 23)) + B_{\bar{N}}(2N + 24 - (2N + 9)) \\
&= B_{\bar{N}}(N + 10) + B_{\bar{N}}(N + 1) + B_{\bar{N}}(15) = (N + 7) + 6 + 15 = \mathbf{N} + \mathbf{28} \\
&(N \geq 79)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(\mathbf{2N} + \mathbf{25}) &= B_{\bar{N}}(2N + 25 - B_{\bar{N}}(2N + 24)) + B_{\bar{N}}(2N + 25 - B_{\bar{N}}(2N + 23)) + B_{\bar{N}}(2N + 25 - B_{\bar{N}}(2N + 22)) \\
&= B_{\bar{N}}(2N + 25 - (N + 28)) + B_{\bar{N}}(2N + 25 - (N + 14)) + B_{\bar{N}}(2N + 25 - (N + 23)) \\
&= B_{\bar{N}}(N - 3) + B_{\bar{N}}(N + 11) + B_{\bar{N}}(N + 2) = (N - 3) + (N + 8) + (N + 1) = \mathbf{3N} + \mathbf{6} \\
&(N \geq 78)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 26) &= B_{\bar{N}}(2N + 26 - B_{\bar{N}}(2N + 25)) + B_{\bar{N}}(2N + 26 - B_{\bar{N}}(2N + 24)) + B_{\bar{N}}(2N + 26 - B_{\bar{N}}(2N + 23)) \\
&= B_{\bar{N}}(2N + 26 - (3N + 6)) + B_{\bar{N}}(2N + 26 - (N + 28)) + B_{\bar{N}}(2N + 26 - (N + 14)) \\
&= B_{\bar{N}}(-N + 20) + B_{\bar{N}}(N - 2) + B_{\bar{N}}(N + 12) = 0 + (N - 2) + (N + 9) = \mathbf{2N} + \mathbf{7} \\
&(\mathbf{N} \geq \mathbf{189})
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 27) &= B_{\bar{N}}(2N + 27 - B_{\bar{N}}(2N + 26)) + B_{\bar{N}}(2N + 27 - B_{\bar{N}}(2N + 25)) + B_{\bar{N}}(2N + 27 - B_{\bar{N}}(2N + 24)) \\
&= B_{\bar{N}}(2N + 27 - (2N + 7)) + B_{\bar{N}}(2N + 27 - (3N + 6)) + B_{\bar{N}}(2N + 27 - (N + 28)) \\
&= B_{\bar{N}}(20) + B_{\bar{N}}(-N + 21) + B_{\bar{N}}(N - 1) = 20 + 0 + (N - 1) = \mathbf{N} + \mathbf{19} \\
&(\mathbf{N} \geq \mathbf{196})
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 28) &= B_{\bar{N}}(2N + 28 - B_{\bar{N}}(2N + 27)) + B_{\bar{N}}(2N + 28 - B_{\bar{N}}(2N + 26)) + B_{\bar{N}}(2N + 28 - B_{\bar{N}}(2N + 25)) \\
&= B_{\bar{N}}(2N + 28 - (N + 19)) + B_{\bar{N}}(2N + 28 - (2N + 7)) + B_{\bar{N}}(2N + 28 - (3N + 6)) \\
&= B_{\bar{N}}(N + 9) + B_{\bar{N}}(21) + B_{\bar{N}}(-N + 22) = 12 + 21 + 0 = \mathbf{33} \\
&(N \geq 22)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 29) &= B_{\bar{N}}(2N + 29 - B_{\bar{N}}(2N + 28)) + B_{\bar{N}}(2N + 29 - B_{\bar{N}}(2N + 27)) + B_{\bar{N}}(2N + 29 - B_{\bar{N}}(2N + 26)) \\
&= B_{\bar{N}}(2N + 29 - 33) + B_{\bar{N}}(2N + 29 - (N + 19)) + B_{\bar{N}}(2N + 29 - (2N + 7)) \\
&= B_{\bar{N}}(2N - 4) + B_{\bar{N}}(N + 10) + B_{\bar{N}}(22) = (N - 2) + (N + 7) + 22 = \mathbf{2N} + \mathbf{27} \\
&(N \geq 71)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 30) &= B_{\bar{N}}(2N + 30 - B_{\bar{N}}(2N + 29)) + B_{\bar{N}}(2N + 30 - B_{\bar{N}}(2N + 28)) + B_{\bar{N}}(2N + 30 - B_{\bar{N}}(2N + 27)) \\
&= B_{\bar{N}}(2N + 30 - (2N + 27)) + B_{\bar{N}}(2N + 30 - 33) + B_{\bar{N}}(2N + 30 - (N + 19)) \\
&= B_{\bar{N}}(3) + B_{\bar{N}}(2N - 3) + B_{\bar{N}}(N + 11) = 3 + (N - 1) + (N + 8) = \mathbf{2N} + \mathbf{10} \\
&(N \geq 70)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(\mathbf{2N} + \mathbf{31}) &= B_{\bar{N}}(2N + 31 - B_{\bar{N}}(2N + 30)) + B_{\bar{N}}(2N + 31 - B_{\bar{N}}(2N + 29)) + B_{\bar{N}}(2N + 31 - B_{\bar{N}}(2N + 28)) \\
&= B_{\bar{N}}(2N + 31 - (2N + 10)) + B_{\bar{N}}(2N + 31 - (2N + 27)) + B_{\bar{N}}(2N + 31 - 33) \\
&= B_{\bar{N}}(21) + B_{\bar{N}}(4) + B_{\bar{N}}(2N - 2) = 21 + 4 + (2N - 1) = \mathbf{2N} + \mathbf{24} \\
&(N \geq 69)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(\mathbf{2N} + \mathbf{32}) &= B_{\bar{N}}(2N + 32 - B_{\bar{N}}(2N + 31)) + B_{\bar{N}}(2N + 32 - B_{\bar{N}}(2N + 30)) + B_{\bar{N}}(2N + 32 - B_{\bar{N}}(2N + 29)) \\
&= B_{\bar{N}}(2N + 32 - (2N + 24)) + B_{\bar{N}}(2N + 32 - (2N + 10)) + B_{\bar{N}}(2N + 32 - (2N + 27)) \\
&= B_{\bar{N}}(8) + B_{\bar{N}}(22) + B_{\bar{N}}(5) = 8 + 22 + 5 = \mathbf{35} \\
&(N \geq 22)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(\mathbf{2N} + \mathbf{33}) &= B_{\bar{N}}(2N + 33 - B_{\bar{N}}(2N + 32)) + B_{\bar{N}}(2N + 33 - B_{\bar{N}}(2N + 31)) + B_{\bar{N}}(2N + 33 - B_{\bar{N}}(2N + 30)) \\
&= B_{\bar{N}}(2N + 33 - 35) + B_{\bar{N}}(2N + 33 - (2N + 24)) + B_{\bar{N}}(2N + 33 - (2N + 10)) \\
&= B_{\bar{N}}(2N - 2) + B_{\bar{N}}(9) + B_{\bar{N}}(23) = (2N - 1) + 9 + 23 = \mathbf{2N} + \mathbf{31} \\
&(N \geq 69)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(\mathbf{2N} + \mathbf{34}) &= B_{\bar{N}}(2N + 34 - B_{\bar{N}}(2N + 33)) + B_{\bar{N}}(2N + 34 - B_{\bar{N}}(2N + 32)) + B_{\bar{N}}(2N + 34 - B_{\bar{N}}(2N + 31)) \\
&= B_{\bar{N}}(2N + 34 - (2N + 31)) + B_{\bar{N}}(2N + 34 - 35) + B_{\bar{N}}(2N + 34 - (2N + 24)) \\
&= B_{\bar{N}}(3) + B_{\bar{N}}(2N - 1) + B_{\bar{N}}(10) = 3 + (N + 6) + 10 = \mathbf{N} + \mathbf{19} \\
&(N \geq 19)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(\mathbf{2N} + \mathbf{35}) &= B_{\bar{N}}(2N + 35 - B_{\bar{N}}(2N + 34)) + B_{\bar{N}}(2N + 35 - B_{\bar{N}}(2N + 33)) + B_{\bar{N}}(2N + 35 - B_{\bar{N}}(2N + 32)) \\
&= B_{\bar{N}}(2N + 35 - (N + 19)) + B_{\bar{N}}(2N + 35 - (2N + 31)) + B_{\bar{N}}(2N + 35 - 35) \\
&= B_{\bar{N}}(N + 16) + B_{\bar{N}}(4) + B_{\bar{N}}(2N) = 17 + 4 + (N + 1) = \mathbf{N} + \mathbf{22} \\
&(N \geq 21)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(\mathbf{2N} + \mathbf{36}) &= B_{\bar{N}}(2N + 36 - B_{\bar{N}}(2N + 35)) + B_{\bar{N}}(2N + 36 - B_{\bar{N}}(2N + 34)) + B_{\bar{N}}(2N + 36 - B_{\bar{N}}(2N + 33)) \\
&= B_{\bar{N}}(2N + 36 - (N + 22)) + B_{\bar{N}}(2N + 36 - (N + 19)) + B_{\bar{N}}(2N + 36 - (2N + 31)) \\
&= B_{\bar{N}}(N + 14) + B_{\bar{N}}(N + 17) + B_{\bar{N}}(5) = (N + 10) + (N + 13) + 5 = \mathbf{2N} + \mathbf{28} \\
&(N \geq 22)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(\mathbf{2N} + \mathbf{37}) &= B_{\bar{N}}(2N + 37 - B_{\bar{N}}(2N + 36)) + B_{\bar{N}}(2N + 37 - B_{\bar{N}}(2N + 35)) + B_{\bar{N}}(2N + 37 - B_{\bar{N}}(2N + 34)) \\
&= B_{\bar{N}}(2N + 37 - (2N + 28)) + B_{\bar{N}}(2N + 37 - (N + 22)) + B_{\bar{N}}(2N + 37 - (N + 19)) \\
&= B_{\bar{N}}(9) + B_{\bar{N}}(N + 15) + B_{\bar{N}}(N + 18) = 9 + (N + 11) + 18 = \mathbf{N} + \mathbf{38} \\
&(N \geq 23)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(\mathbf{2N} + \mathbf{38}) &= B_{\bar{N}}(2N + 38 - B_{\bar{N}}(2N + 37)) + B_{\bar{N}}(2N + 38 - B_{\bar{N}}(2N + 36)) + B_{\bar{N}}(2N + 38 - B_{\bar{N}}(2N + 35)) \\
&= B_{\bar{N}}(2N + 38 - (N + 38)) + B_{\bar{N}}(2N + 38 - (2N + 28)) + B_{\bar{N}}(2N + 38 - (N + 22)) \\
&= B_{\bar{N}}(N) + B_{\bar{N}}(10) + B_{\bar{N}}(N + 16) = N + 10 + 17 = \mathbf{N} + \mathbf{27} \\
&(N \geq 31)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(\mathbf{2N} + \mathbf{39}) &= B_{\bar{N}}(2N + 39 - B_{\bar{N}}(2N + 38)) + B_{\bar{N}}(2N + 39 - B_{\bar{N}}(2N + 37)) + B_{\bar{N}}(2N + 39 - B_{\bar{N}}(2N + 36)) \\
&= B_{\bar{N}}(2N + 39 - (N + 27)) + B_{\bar{N}}(2N + 39 - (N + 38)) + B_{\bar{N}}(2N + 39 - (2N + 28)) \\
&= B_{\bar{N}}(N + 12) + B_{\bar{N}}(N + 1) + B_{\bar{N}}(11) = (N + 9) + 6 + 11 = \mathbf{N} + \mathbf{26} \\
&(N \geq 32)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(\mathbf{2N} + \mathbf{40}) &= B_{\bar{N}}(2N + 40 - B_{\bar{N}}(2N + 39)) + B_{\bar{N}}(2N + 40 - B_{\bar{N}}(2N + 38)) + B_{\bar{N}}(2N + 40 - B_{\bar{N}}(2N + 37)) \\
&= B_{\bar{N}}(2N + 40 - (N + 26)) + B_{\bar{N}}(2N + 40 - (N + 27)) + B_{\bar{N}}(2N + 40 - (N + 38)) \\
&= B_{\bar{N}}(N + 14) + B_{\bar{N}}(N + 13) + B_{\bar{N}}(N + 2) = (N + 10) + 15 + (N + 1) = \mathbf{2N} + \mathbf{26} \\
&(N \geq 71)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 41) &= B_{\bar{N}}(2N + 41 - B_{\bar{N}}(2N + 40)) + B_{\bar{N}}(2N + 41 - B_{\bar{N}}(2N + 39)) + B_{\bar{N}}(2N + 41 - B_{\bar{N}}(2N + 38)) \\
&= B_{\bar{N}}(2N + 41 - (2N + 26)) + B_{\bar{N}}(2N + 41 - (N + 26)) + B_{\bar{N}}(2N + 41 - (N + 27)) \\
&= B_{\bar{N}}(15) + B_{\bar{N}}(N + 15) + B_{\bar{N}}(N + 14) = 15 + (N + 11) + (N + 10) = \mathbf{2N} + \mathbf{36} \\
&(N \geq 70)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 42) &= B_{\bar{N}}(2N + 42 - B_{\bar{N}}(2N + 41)) + B_{\bar{N}}(2N + 42 - B_{\bar{N}}(2N + 40)) + B_{\bar{N}}(2N + 42 - B_{\bar{N}}(2N + 39)) \\
&= B_{\bar{N}}(2N + 42 - (2N + 36)) + B_{\bar{N}}(2N + 42 - (2N + 26)) + B_{\bar{N}}(2N + 42 - (N + 26)) \\
&= B_{\bar{N}}(6) + B_{\bar{N}}(16) + B_{\bar{N}}(N + 16) = 6 + 16 + 17 = \mathbf{39} \\
&(N \geq 69)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 43) &= B_{\bar{N}}(2N + 43 - B_{\bar{N}}(2N + 42)) + B_{\bar{N}}(2N + 43 - B_{\bar{N}}(2N + 41)) + B_{\bar{N}}(2N + 43 - B_{\bar{N}}(2N + 40)) \\
&= B_{\bar{N}}(2N + 43 - 39) + B_{\bar{N}}(2N + 43 - (2N + 36)) + B_{\bar{N}}(2N + 43 - (2N + 26)) \\
&= B_{\bar{N}}(2N + 4) + B_{\bar{N}}(7) + B_{\bar{N}}(17) = (N + 5) + 7 + 17 = \mathbf{N} + \mathbf{29} \\
&(N \geq 38)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 44) &= B_{\bar{N}}(2N + 44 - B_{\bar{N}}(2N + 43)) + B_{\bar{N}}(2N + 44 - B_{\bar{N}}(2N + 42)) + B_{\bar{N}}(2N + 44 - B_{\bar{N}}(2N + 41)) \\
&= B_{\bar{N}}(2N + 44 - (N + 29)) + B_{\bar{N}}(2N + 44 - 39) + B_{\bar{N}}(2N + 44 - (2N + 36)) \\
&= B_{\bar{N}}(N + 15) + B_{\bar{N}}(2N + 5) + B_{\bar{N}}(8) = (N + 11) + 2N + 8 = \mathbf{3N} + \mathbf{19} \\
&(N \geq 39)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 45) &= B_{\bar{N}}(2N + 45 - B_{\bar{N}}(2N + 44)) + B_{\bar{N}}(2N + 45 - B_{\bar{N}}(2N + 43)) + B_{\bar{N}}(2N + 45 - B_{\bar{N}}(2N + 42)) \\
&= B_{\bar{N}}(2N + 45 - (3N + 19)) + B_{\bar{N}}(2N + 45 - (N + 29)) + B_{\bar{N}}(2N + 45 - 39) \\
&= B_{\bar{N}}(-N + 26) + B_{\bar{N}}(N + 16) + B_{\bar{N}}(2N + 6) = 0 + 17 + 15 = \mathbf{32} \\
&(N \geq 71)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(\mathbf{2N} + \mathbf{46}) &= B_{\bar{N}}(2N + 46 - B_{\bar{N}}(2N + 45)) + B_{\bar{N}}(2N + 46 - B_{\bar{N}}(2N + 44)) + B_{\bar{N}}(2N + 46 - B_{\bar{N}}(2N + 43)) \\
&= B_{\bar{N}}(2N + 46 - 32) + B_{\bar{N}}(2N + 46 - (3N + 19)) + B_{\bar{N}}(2N + 46 - (N + 29)) \\
&= B_{\bar{N}}(2N + 14) + B_{\bar{N}}(-N + 27) + B_{\bar{N}}(N + 17) = (N + 21) + 0 + (N + 13) = \mathbf{2N} + \mathbf{34} \\
&(N \geq 128)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(\mathbf{2N} + \mathbf{47}) &= B_{\bar{N}}(2N + 47 - B_{\bar{N}}(2N + 46)) + B_{\bar{N}}(2N + 47 - B_{\bar{N}}(2N + 45)) + B_{\bar{N}}(2N + 47 - B_{\bar{N}}(2N + 44)) \\
&= B_{\bar{N}}(2N + 47 - (2N + 34)) + B_{\bar{N}}(2N + 47 - 32) + B_{\bar{N}}(2N + 47 - (3N + 19)) \\
&= B_{\bar{N}}(13) + B_{\bar{N}}(2N + 15) + B_{\bar{N}}(-N + 28) = 13 + (N + 5) + 0 = \mathbf{N} + \mathbf{18} \\
&(N \geq 135)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(\mathbf{2N} + \mathbf{48}) &= B_{\bar{N}}(2N + 48 - B_{\bar{N}}(2N + 47)) + B_{\bar{N}}(2N + 48 - B_{\bar{N}}(2N + 46)) + B_{\bar{N}}(2N + 48 - B_{\bar{N}}(2N + 45)) \\
&= B_{\bar{N}}(2N + 48 - (N + 18)) + B_{\bar{N}}(2N + 48 - (2N + 34)) + B_{\bar{N}}(2N + 48 - 32) \\
&= B_{\bar{N}}(N + 30) + B_{\bar{N}}(14) + B_{\bar{N}}(2N + 16) = (N + 9) + 14 + (2N + 6) = \mathbf{3N} + \mathbf{29} \\
&(N \geq 142)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(\mathbf{2N} + \mathbf{49}) &= B_{\bar{N}}(2N + 49 - B_{\bar{N}}(2N + 48)) + B_{\bar{N}}(2N + 49 - B_{\bar{N}}(2N + 47)) + B_{\bar{N}}(2N + 49 - B_{\bar{N}}(2N + 46)) \\
&= B_{\bar{N}}(2N + 49 - (3N + 29)) + B_{\bar{N}}(2N + 49 - (N + 18)) + B_{\bar{N}}(2N + 49 - (2N + 34)) \\
&= B_{\bar{N}}(-N + 20) + B_{\bar{N}}(N + 31) + B_{\bar{N}}(15) = 0 + 22 + 15 = \mathbf{37} \\
&(N \geq 22)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(\mathbf{2N} + \mathbf{50}) &= B_{\bar{N}}(2N + 50 - B_{\bar{N}}(2N + 49)) + B_{\bar{N}}(2N + 50 - B_{\bar{N}}(2N + 48)) + B_{\bar{N}}(2N + 50 - B_{\bar{N}}(2N + 47)) \\
&= B_{\bar{N}}(2N + 50 - 37) + B_{\bar{N}}(2N + 50 - (3N + 29)) + B_{\bar{N}}(2N + 50 - (N + 18)) \\
&= B_{\bar{N}}(2N + 13) + B_{\bar{N}}(-N + 21) + B_{\bar{N}}(N + 32) = (2N + 13) + 0 + (N + 30) = \mathbf{3N} + \mathbf{43} \\
&(N \geq 21)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(\mathbf{2N} + \mathbf{51}) &= B_{\bar{N}}(2N + 51 - B_{\bar{N}}(2N + 50)) + B_{\bar{N}}(2N + 51 - B_{\bar{N}}(2N + 49)) + B_{\bar{N}}(2N + 51 - B_{\bar{N}}(2N + 48)) \\
&= B_{\bar{N}}(2N + 51 - (3N + 43)) + B_{\bar{N}}(2N + 51 - 37) + B_{\bar{N}}(2N + 51 - (3N + 29)) \\
&= B_{\bar{N}}(-N + 8) + B_{\bar{N}}(2N + 14) + B_{\bar{N}}(-N + 22) = 0 + (N + 21) + 0 = \mathbf{N} + \mathbf{21} \\
&(N \geq 39)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(\mathbf{2N} + \mathbf{52}) &= B_{\bar{N}}(2N + 52 - B_{\bar{N}}(2N + 51)) + B_{\bar{N}}(2N + 52 - B_{\bar{N}}(2N + 50)) + B_{\bar{N}}(2N + 52 - B_{\bar{N}}(2N + 49)) \\
&= B_{\bar{N}}(2N + 52 - (N + 21)) + B_{\bar{N}}(2N + 52 - (3N + 43)) + B_{\bar{N}}(2N + 52 - 37) \\
&= B_{\bar{N}}(N + 31) + B_{\bar{N}}(-N + 9) + B_{\bar{N}}(2N + 15) = 22 + 0 + (N + 5) = \mathbf{N} + \mathbf{27} \\
&(N \geq 55)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(\mathbf{2N} + \mathbf{53}) &= B_{\bar{N}}(2N + 53 - B_{\bar{N}}(2N + 52)) + B_{\bar{N}}(2N + 53 - B_{\bar{N}}(2N + 51)) + B_{\bar{N}}(2N + 53 - B_{\bar{N}}(2N + 50)) \\
&= B_{\bar{N}}(2N + 53 - (N + 27)) + B_{\bar{N}}(2N + 53 - (N + 21)) + B_{\bar{N}}(2N + 53 - (3N + 43)) \\
&= B_{\bar{N}}(N + 26) + B_{\bar{N}}(N + 32) + B_{\bar{N}}(-N + 10) = 9 + (N + 30) + 0 = \mathbf{N} + \mathbf{39} \\
&(N \geq 69)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(\mathbf{2N} + \mathbf{54}) &= B_{\bar{N}}(2N + 54 - B_{\bar{N}}(2N + 53)) + B_{\bar{N}}(2N + 54 - B_{\bar{N}}(2N + 52)) + B_{\bar{N}}(2N + 54 - B_{\bar{N}}(2N + 51)) \\
&= B_{\bar{N}}(2N + 54 - (N + 39)) + B_{\bar{N}}(2N + 54 - (N + 27)) + B_{\bar{N}}(2N + 54 - (N + 21)) \\
&= B_{\bar{N}}(N + 15) + B_{\bar{N}}(N + 27) + B_{\bar{N}}(N + 33) = (N + 11) + 18 + (N + 35) = \mathbf{2N} + \mathbf{64} \\
&(N \geq 57)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(\mathbf{2N} + \mathbf{55}) &= B_{\bar{N}}(2N + 55 - B_{\bar{N}}(2N + 54)) + B_{\bar{N}}(2N + 55 - B_{\bar{N}}(2N + 53)) + B_{\bar{N}}(2N + 55 - B_{\bar{N}}(2N + 52)) \\
&= B_{\bar{N}}(2N + 55 - (2N + 64)) + B_{\bar{N}}(2N + 55 - (N + 39)) + B_{\bar{N}}(2N + 55 - (N + 27)) \\
&= B_{\bar{N}}(-9) + B_{\bar{N}}(N + 16) + B_{\bar{N}}(N + 28) = 0 + 17 + (2N + 20) = \mathbf{2N} + \mathbf{37} \\
&(N \geq 43)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(\mathbf{2N} + \mathbf{56}) &= B_{\bar{N}}(2N + 56 - B_{\bar{N}}(2N + 55)) + B_{\bar{N}}(2N + 56 - B_{\bar{N}}(2N + 54)) + B_{\bar{N}}(2N + 56 - B_{\bar{N}}(2N + 53)) \\
&= B_{\bar{N}}(2N + 56 - (2N + 37)) + B_{\bar{N}}(2N + 56 - (2N + 64)) + B_{\bar{N}}(2N + 56 - (N + 39)) \\
&= B_{\bar{N}}(19) + B_{\bar{N}}(-8) + B_{\bar{N}}(N + 17) = 19 + 0 + (N + 13) = \mathbf{N} + \mathbf{32} \\
&(N \geq 44)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(\mathbf{2N} + \mathbf{57}) &= B_{\bar{N}}(2N + 57 - B_{\bar{N}}(2N + 56)) + B_{\bar{N}}(2N + 57 - B_{\bar{N}}(2N + 55)) + B_{\bar{N}}(2N + 57 - B_{\bar{N}}(2N + 54)) \\
&= B_{\bar{N}}(2N + 57 - (N + 32)) + B_{\bar{N}}(2N + 57 - (2N + 37)) + B_{\bar{N}}(2N + 57 - (2N + 64)) \\
&= B_{\bar{N}}(N + 25) + B_{\bar{N}}(20) + B_{\bar{N}}(-7) = (2N + 5) + 20 + 0 = \mathbf{2N} + \mathbf{25} \\
&(N \geq 45)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(\mathbf{2N} + \mathbf{58}) &= B_{\bar{N}}(2N + 58 - B_{\bar{N}}(2N + 57)) + B_{\bar{N}}(2N + 58 - B_{\bar{N}}(2N + 56)) + B_{\bar{N}}(2N + 58 - B_{\bar{N}}(2N + 55)) \\
&= B_{\bar{N}}(2N + 58 - (2N + 25)) + B_{\bar{N}}(2N + 58 - (N + 32)) + B_{\bar{N}}(2N + 58 - (2N + 37)) \\
&= B_{\bar{N}}(33) + B_{\bar{N}}(N + 26) + B_{\bar{N}}(21) = 33 + 9 + 21 = \mathbf{63} \\
&(N \geq 33)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(\mathbf{2N} + \mathbf{59}) &= B_{\bar{N}}(2N + 59 - B_{\bar{N}}(2N + 58)) + B_{\bar{N}}(2N + 59 - B_{\bar{N}}(2N + 57)) + B_{\bar{N}}(2N + 59 - B_{\bar{N}}(2N + 56)) \\
&= B_{\bar{N}}(2N + 59 - 63) + B_{\bar{N}}(2N + 59 - (2N + 25)) + B_{\bar{N}}(2N + 59 - (N + 32)) \\
&= B_{\bar{N}}(2N - 4) + B_{\bar{N}}(34) + B_{\bar{N}}(N + 27) = (N - 2) + 34 + 18 = \mathbf{N} + \mathbf{50} \\
&(N \geq 71)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(\mathbf{2N} + \mathbf{60}) &= B_{\bar{N}}(2N + 60 - B_{\bar{N}}(2N + 59)) + B_{\bar{N}}(2N + 60 - B_{\bar{N}}(2N + 58)) + B_{\bar{N}}(2N + 60 - B_{\bar{N}}(2N + 57)) \\
&= B_{\bar{N}}(2N + 60 - (N + 50)) + B_{\bar{N}}(2N + 60 - 63) + B_{\bar{N}}(2N + 60 - (2N + 25)) \\
&= B_{\bar{N}}(N + 10) + B_{\bar{N}}(2N - 3) + B_{\bar{N}}(35) = (N + 7) + (N - 1) + 35 = \mathbf{2N} + \mathbf{41} \\
&(N \geq 70)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + \mathbf{61}) &= B_{\bar{N}}(2N + 61 - B_{\bar{N}}(2N + 60)) + B_{\bar{N}}(2N + 61 - B_{\bar{N}}(2N + 59)) + B_{\bar{N}}(2N + 61 - B_{\bar{N}}(2N + 58)) \\
&= B_{\bar{N}}(2N + 61 - (2N + 41)) + B_{\bar{N}}(2N + 61 - (N + 50)) + B_{\bar{N}}(2N + 61 - 63) \\
&= B_{\bar{N}}(20) + B_{\bar{N}}(N + 11) + B_{\bar{N}}(2N - 2) = 20 + (N + 8) + (2N - 1) = \mathbf{3N} + \mathbf{27} \\
&(N \geq 69)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + \mathbf{62}) &= B_{\bar{N}}(2N + 62 - B_{\bar{N}}(2N + 61)) + B_{\bar{N}}(2N + 62 - B_{\bar{N}}(2N + 60)) + B_{\bar{N}}(2N + 62 - B_{\bar{N}}(2N + 59)) \\
&= B_{\bar{N}}(2N + 62 - (3N + 27)) + B_{\bar{N}}(2N + 62 - (2N + 41)) + B_{\bar{N}}(2N + 62 - (N + 50)) \\
&= B_{\bar{N}}(-N + 35) + B_{\bar{N}}(21) + B_{\bar{N}}(N + 12) = 0 + 21 + (N + 9) = \mathbf{N} + \mathbf{30} \\
&(N \geq 43)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + \mathbf{63}) &= B_{\bar{N}}(2N + 63 - B_{\bar{N}}(2N + 62)) + B_{\bar{N}}(2N + 63 - B_{\bar{N}}(2N + 61)) + B_{\bar{N}}(2N + 63 - B_{\bar{N}}(2N + 60)) \\
&= B_{\bar{N}}(2N + 63 - (N + 30)) + B_{\bar{N}}(2N + 63 - (3N + 27)) + B_{\bar{N}}(2N + 63 - (2N + 41)) \\
&= B_{\bar{N}}(N + 33) + B_{\bar{N}}(-N + 36) + B_{\bar{N}}(22) = (N + 35) + 0 + 22 = \mathbf{N} + \mathbf{57} \\
&(N \geq 36)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + \mathbf{64}) &= B_{\bar{N}}(2N + 64 - B_{\bar{N}}(2N + 63)) + B_{\bar{N}}(2N + 64 - B_{\bar{N}}(2N + 62)) + B_{\bar{N}}(2N + 64 - B_{\bar{N}}(2N + 61)) \\
&= B_{\bar{N}}(2N + 64 - (N + 57)) + B_{\bar{N}}(2N + 64 - (N + 30)) + B_{\bar{N}}(2N + 64 - (3N + 27)) \\
&= B_{\bar{N}}(N + 7) + B_{\bar{N}}(N + 34) + B_{\bar{N}}(-N + 37) = (N + 5) + (N + 13) + 0 = \mathbf{2N} + \mathbf{18} \\
&(N \geq 42)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + \mathbf{65}) &= B_{\bar{N}}(2N + 65 - B_{\bar{N}}(2N + 64)) + B_{\bar{N}}(2N + 65 - B_{\bar{N}}(2N + 63)) + B_{\bar{N}}(2N + 65 - B_{\bar{N}}(2N + 62)) \\
&= B_{\bar{N}}(2N + 65 - (2N + 18)) + B_{\bar{N}}(2N + 65 - (N + 57)) + B_{\bar{N}}(2N + 65 - (N + 30)) \\
&= B_{\bar{N}}(47) + B_{\bar{N}}(N + 8) + B_{\bar{N}}(N + 35) = 47 + (N + 6) + 27 = \mathbf{N} + \mathbf{80} \\
&(N \geq 57)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + \mathbf{66}) &= B_{\bar{N}}(2N + 66 - B_{\bar{N}}(2N + 65)) + B_{\bar{N}}(2N + 66 - B_{\bar{N}}(2N + 64)) + B_{\bar{N}}(2N + 66 - B_{\bar{N}}(2N + 63)) \\
&= B_{\bar{N}}(2N + 66 - (N + 80)) + B_{\bar{N}}(2N + 66 - (2N + 18)) + B_{\bar{N}}(2N + 66 - (N + 57)) \\
&= B_{\bar{N}}(N - 14) + B_{\bar{N}}(48) + B_{\bar{N}}(N + 9) = (N - 14) + 48 + 12 = \mathbf{N} + \mathbf{46} \\
&(N \geq 58)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + \mathbf{67}) &= B_{\bar{N}}(2N + 67 - B_{\bar{N}}(2N + 66)) + B_{\bar{N}}(2N + 67 - B_{\bar{N}}(2N + 65)) + B_{\bar{N}}(2N + 67 - B_{\bar{N}}(2N + 64)) \\
&= B_{\bar{N}}(2N + 67 - (N + 46)) + B_{\bar{N}}(2N + 67 - (N + 80)) + B_{\bar{N}}(2N + 67 - (2N + 18)) \\
&= B_{\bar{N}}(N + 21) + B_{\bar{N}}(N - 13) + B_{\bar{N}}(49) = (N + 16) + (N - 13) + 49 = \mathbf{2N} + \mathbf{52} \\
&(N \geq 59)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + \mathbf{68}) &= B_{\bar{N}}(2N + 68 - B_{\bar{N}}(2N + 67)) + B_{\bar{N}}(2N + 68 - B_{\bar{N}}(2N + 66)) + B_{\bar{N}}(2N + 68 - B_{\bar{N}}(2N + 65)) \\
&= B_{\bar{N}}(2N + 68 - (2N + 52)) + B_{\bar{N}}(2N + 68 - (N + 46)) + B_{\bar{N}}(2N + 68 - (N + 80)) \\
&= B_{\bar{N}}(16) + B_{\bar{N}}(N + 22) + B_{\bar{N}}(N - 12) = 16 + 22 + (N - 12) = \mathbf{N} + \mathbf{26} \\
&(N \geq 21)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + \mathbf{69}) &= B_{\bar{N}}(2N + 69 - B_{\bar{N}}(2N + 68)) + B_{\bar{N}}(2N + 69 - B_{\bar{N}}(2N + 67)) + B_{\bar{N}}(2N + 69 - B_{\bar{N}}(2N + 66)) \\
&= B_{\bar{N}}(2N + 69 - (N + 26)) + B_{\bar{N}}(2N + 69 - (2N + 52)) + B_{\bar{N}}(2N + 69 - (N + 46)) \\
&= B_{\bar{N}}(N + 43) + B_{\bar{N}}(17) + B_{\bar{N}}(N + 23) = (N + 8) + 17 + 21 = \mathbf{N} + \mathbf{46} \\
&(N \geq 49)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + \mathbf{70}) &= B_{\bar{N}}(2N + 70 - B_{\bar{N}}(2N + 69)) + B_{\bar{N}}(2N + 70 - B_{\bar{N}}(2N + 68)) + B_{\bar{N}}(2N + 70 - B_{\bar{N}}(2N + 67)) \\
&= B_{\bar{N}}(2N + 70 - (N + 46)) + B_{\bar{N}}(2N + 70 - (N + 26)) + B_{\bar{N}}(2N + 70 - (2N + 52)) \\
&= B_{\bar{N}}(N + 24) + B_{\bar{N}}(N + 44) + B_{\bar{N}}(18) = (2N + 11) + 42 + 18 = \mathbf{2N} + \mathbf{71} \\
&(N \geq 73)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + \mathbf{71}) &= B_{\bar{N}}(2N + 71 - B_{\bar{N}}(2N + 70)) + B_{\bar{N}}(2N + 71 - B_{\bar{N}}(2N + 69)) + B_{\bar{N}}(2N + 71 - B_{\bar{N}}(2N + 68)) \\
&= B_{\bar{N}}(2N + 71 - (2N + 71)) + B_{\bar{N}}(2N + 71 - (N + 46)) + B_{\bar{N}}(2N + 71 - (N + 26)) \\
&= B_{\bar{N}}(0) + B_{\bar{N}}(N + 25) + B_{\bar{N}}(N + 45) = 0 + (2N + 5) + (N + 40) = \mathbf{3N} + \mathbf{45} \\
&(N \geq 108)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + \mathbf{72}) &= B_{\bar{N}}(2N + 72 - B_{\bar{N}}(2N + 71)) + B_{\bar{N}}(2N + 72 - B_{\bar{N}}(2N + 70)) + B_{\bar{N}}(2N + 72 - B_{\bar{N}}(2N + 69)) \\
&= B_{\bar{N}}(2N + 72 - (3N + 45)) + B_{\bar{N}}(2N + 72 - (2N + 71)) + B_{\bar{N}}(2N + 72 - (N + 46)) \\
&= B_{\bar{N}}(-N + 27) + B_{\bar{N}}(1) + B_{\bar{N}}(N + 26) = 0 + 1 + 9 = \mathbf{10} \\
&(N \geq 107)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + \mathbf{73}) &= B_{\bar{N}}(2N + 73 - B_{\bar{N}}(2N + 72)) + B_{\bar{N}}(2N + 73 - B_{\bar{N}}(2N + 71)) + B_{\bar{N}}(2N + 73 - B_{\bar{N}}(2N + 70)) \\
&= B_{\bar{N}}(2N + 73 - 10) + B_{\bar{N}}(2N + 73 - (3N + 45)) + B_{\bar{N}}(2N + 73 - (2N + 71)) \\
&= B_{\bar{N}}(2N + 63) + B_{\bar{N}}(-N + 28) + B_{\bar{N}}(2) = (N + 57) + 0 + 2 = \mathbf{N} + \mathbf{59} \\
&(N \geq 106)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + \mathbf{74}) &= B_{\bar{N}}(2N + 74 - B_{\bar{N}}(2N + 73)) + B_{\bar{N}}(2N + 74 - B_{\bar{N}}(2N + 72)) + B_{\bar{N}}(2N + 74 - B_{\bar{N}}(2N + 71)) \\
&= B_{\bar{N}}(2N + 74 - (N + 59)) + B_{\bar{N}}(2N + 74 - 10) + B_{\bar{N}}(2N + 74 - (3N + 45)) \\
&= B_{\bar{N}}(N + 15) + B_{\bar{N}}(2N + 64) + B_{\bar{N}}(-N + 29) = (N + 11) + (2N + 18) + 0 = \mathbf{3N} + \mathbf{29} \\
&(N \geq 74)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + \mathbf{75}) &= B_{\bar{N}}(2N + 75 - B_{\bar{N}}(2N + 74)) + B_{\bar{N}}(2N + 75 - B_{\bar{N}}(2N + 73)) + B_{\bar{N}}(2N + 75 - B_{\bar{N}}(2N + 72)) \\
&= B_{\bar{N}}(2N + 75 - (3N + 29)) + B_{\bar{N}}(2N + 75 - (N + 59)) + B_{\bar{N}}(2N + 75 - 10) \\
&= B_{\bar{N}}(-N + 46) + B_{\bar{N}}(N + 16) + B_{\bar{N}}(2N + 65) = 0 + 17 + (N + 80) = \mathbf{N} + \mathbf{97} \\
&(N \geq 80)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + \mathbf{76}) &= B_{\bar{N}}(2N + 76 - B_{\bar{N}}(2N + 75)) + B_{\bar{N}}(2N + 76 - B_{\bar{N}}(2N + 74)) + B_{\bar{N}}(2N + 76 - B_{\bar{N}}(2N + 73)) \\
&= B_{\bar{N}}(2N + 76 - (N + 97)) + B_{\bar{N}}(2N + 76 - (3N + 29)) + B_{\bar{N}}(2N + 76 - (N + 59)) \\
&= B_{\bar{N}}(N - 21) + B_{\bar{N}}(-N + 47) + B_{\bar{N}}(N + 17) = (N - 21) + 0 + (N + 13) = \mathbf{2N} - \mathbf{8} \\
&(N \geq 81)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + \mathbf{77}) &= B_{\bar{N}}(2N + 77 - B_{\bar{N}}(2N + 76)) + B_{\bar{N}}(2N + 77 - B_{\bar{N}}(2N + 75)) + B_{\bar{N}}(2N + 77 - B_{\bar{N}}(2N + 74)) \\
&= B_{\bar{N}}(2N + 77 - (2N - 8)) + B_{\bar{N}}(2N + 77 - (N + 97)) + B_{\bar{N}}(2N + 77 - (3N + 29)) \\
&= B_{\bar{N}}(85) + B_{\bar{N}}(N - 20) + B_{\bar{N}}(-N + 48) = 85 + (N - 20) + 0 = \mathbf{N} + \mathbf{65} \\
&(N \geq 85)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + \mathbf{78}) &= B_{\bar{N}}(2N + 78 - B_{\bar{N}}(2N + 77)) + B_{\bar{N}}(2N + 78 - B_{\bar{N}}(2N + 76)) + B_{\bar{N}}(2N + 78 - B_{\bar{N}}(2N + 75)) \\
&= B_{\bar{N}}(2N + 78 - (N + 65)) + B_{\bar{N}}(2N + 78 - (2N - 8)) + B_{\bar{N}}(2N + 78 - (N + 97)) \\
&= B_{\bar{N}}(N + 13) + B_{\bar{N}}(86) + B_{\bar{N}}(N - 19) = 15 + 86 + (N - 19) = \mathbf{N} + \mathbf{82} \\
&(N \geq 86)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + \mathbf{79}) &= B_{\bar{N}}(2N + 79 - B_{\bar{N}}(2N + 78)) + B_{\bar{N}}(2N + 79 - B_{\bar{N}}(2N + 77)) + B_{\bar{N}}(2N + 79 - B_{\bar{N}}(2N + 76)) \\
&= B_{\bar{N}}(2N + 79 - (N + 82)) + B_{\bar{N}}(2N + 79 - (N + 65)) + B_{\bar{N}}(2N + 79 - (2N - 8)) \\
&= B_{\bar{N}}(N - 3) + B_{\bar{N}}(N + 14) + B_{\bar{N}}(87) = (N - 3) + (N + 10) + 87 = \mathbf{2N} + \mathbf{94} \\
&(N \geq 87)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + \mathbf{80}) &= B_{\bar{N}}(2N + 80 - B_{\bar{N}}(2N + 79)) + B_{\bar{N}}(2N + 80 - B_{\bar{N}}(2N + 78)) + B_{\bar{N}}(2N + 80 - B_{\bar{N}}(2N + 77)) \\
&= B_{\bar{N}}(2N + 80 - (2N + 94)) + B_{\bar{N}}(2N + 80 - (N + 82)) + B_{\bar{N}}(2N + 80 - (N + 65)) \\
&= B_{\bar{N}}(-14) + B_{\bar{N}}(N - 2) + B_{\bar{N}}(N + 15) = 0 + (N - 2) + (N + 11) = \mathbf{2N} + \mathbf{9} \\
&(N \geq 82)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 81) &= B_{\bar{N}}(2N + 81 - B_{\bar{N}}(2N + 80)) + B_{\bar{N}}(2N + 81 - B_{\bar{N}}(2N + 79)) + B_{\bar{N}}(2N + 81 - B_{\bar{N}}(2N + 78)) \\
&= B_{\bar{N}}(2N + 81 - (2N + 9)) + B_{\bar{N}}(2N + 81 - (2N + 94)) + B_{\bar{N}}(2N + 81 - (N + 82)) \\
&= B_{\bar{N}}(72) + B_{\bar{N}}(-13) + B_{\bar{N}}(N - 1) = 72 + 0 + (N - 1) = \mathbf{N} + \mathbf{71} \\
&(N \geq 83)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 82) &= B_{\bar{N}}(2N + 82 - B_{\bar{N}}(2N + 81)) + B_{\bar{N}}(2N + 82 - B_{\bar{N}}(2N + 80)) + B_{\bar{N}}(2N + 82 - B_{\bar{N}}(2N + 79)) \\
&= B_{\bar{N}}(2N + 82 - (N + 71)) + B_{\bar{N}}(2N + 82 - (2N + 9)) + B_{\bar{N}}(2N + 82 - (2N + 94)) \\
&= B_{\bar{N}}(N + 11) + B_{\bar{N}}(73) + B_{\bar{N}}(-12) = (N + 8) + 73 + 0 = \mathbf{N} + \mathbf{81} \\
&(N \geq 74)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 83) &= B_{\bar{N}}(2N + 83 - B_{\bar{N}}(2N + 82)) + B_{\bar{N}}(2N + 83 - B_{\bar{N}}(2N + 81)) + B_{\bar{N}}(2N + 83 - B_{\bar{N}}(2N + 80)) \\
&= B_{\bar{N}}(2N + 83 - (N + 81)) + B_{\bar{N}}(2N + 83 - (N + 71)) + B_{\bar{N}}(2N + 83 - (2N + 9)) \\
&= B_{\bar{N}}(N + 2) + B_{\bar{N}}(N + 12) + B_{\bar{N}}(74) = (N + 1) + (N + 9) + 74 = \mathbf{2N} + \mathbf{84} \\
&(N \geq 87)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 84) &= B_{\bar{N}}(2N + 84 - B_{\bar{N}}(2N + 83)) + B_{\bar{N}}(2N + 84 - B_{\bar{N}}(2N + 82)) + B_{\bar{N}}(2N + 84 - B_{\bar{N}}(2N + 81)) \\
&= B_{\bar{N}}(2N + 84 - (2N + 84)) + B_{\bar{N}}(2N + 84 - (N + 81)) + B_{\bar{N}}(2N + 84 - (N + 71)) \\
&= B_{\bar{N}}(0) + B_{\bar{N}}(N + 3) + B_{\bar{N}}(N + 13) = 0 + (N + 2) + 15 = \mathbf{N} + \mathbf{17} \\
&(N \geq 88)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 85) &= B_{\bar{N}}(2N + 85 - B_{\bar{N}}(2N + 84)) + B_{\bar{N}}(2N + 85 - B_{\bar{N}}(2N + 83)) + B_{\bar{N}}(2N + 85 - B_{\bar{N}}(2N + 82)) \\
&= B_{\bar{N}}(2N + 85 - (N + 17)) + B_{\bar{N}}(2N + 85 - (2N + 84)) + B_{\bar{N}}(2N + 85 - (N + 81)) \\
&= B_{\bar{N}}(N + 68) + B_{\bar{N}}(1) + B_{\bar{N}}(N + 4) = (2N + 2) + 1 + (N + 3) = \mathbf{3N} + \mathbf{6} \\
&(N \geq 89)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 86) &= B_{\bar{N}}(2N + 86 - B_{\bar{N}}(2N + 85)) + B_{\bar{N}}(2N + 86 - B_{\bar{N}}(2N + 84)) + B_{\bar{N}}(2N + 86 - B_{\bar{N}}(2N + 83)) \\
&= B_{\bar{N}}(2N + 86 - (3N + 6)) + B_{\bar{N}}(2N + 86 - (N + 17)) + B_{\bar{N}}(2N + 86 - (2N + 84)) \\
&= B_{\bar{N}}(-N + 80) + B_{\bar{N}}(N + 69) + B_{\bar{N}}(2) = 0 + (N - 2) + 2 = \mathbf{N} \\
&(N \geq 80)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 87) &= B_{\bar{N}}(2N + 87 - B_{\bar{N}}(2N + 86)) + B_{\bar{N}}(2N + 87 - B_{\bar{N}}(2N + 85)) + B_{\bar{N}}(2N + 87 - B_{\bar{N}}(2N + 84)) \\
&= B_{\bar{N}}(2N + 87 - N) + B_{\bar{N}}(2N + 87 - (3N + 6)) + B_{\bar{N}}(2N + 87 - (N + 17)) \\
&= B_{\bar{N}}(N + 87) + B_{\bar{N}}(-N + 81) + B_{\bar{N}}(N + 70) = 7 + 0 + 72 = \mathbf{79} \\
&(N \geq 85)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 88) &= B_{\bar{N}}(2N + 88 - B_{\bar{N}}(2N + 87)) + B_{\bar{N}}(2N + 88 - B_{\bar{N}}(2N + 86)) + B_{\bar{N}}(2N + 88 - B_{\bar{N}}(2N + 85)) \\
&= B_{\bar{N}}(2N + 88 - 79) + B_{\bar{N}}(2N + 88 - N) + B_{\bar{N}}(2N + 88 - (3N + 6)) \\
&= B_{\bar{N}}(2N + 9) + B_{\bar{N}}(N + 88) + B_{\bar{N}}(-N + 82) = \left(\frac{32N}{7} + \frac{590}{7} \right) + (2N + 69) + 0 = \frac{46\mathbf{N}}{7} + \frac{1073}{7} \\
&(N \geq 86)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 89) &= B_{\bar{N}}(2N + 89 - B_{\bar{N}}(2N + 88)) + B_{\bar{N}}(2N + 89 - B_{\bar{N}}(2N + 87)) + B_{\bar{N}}(2N + 89 - B_{\bar{N}}(2N + 86)) \\
&= B_{\bar{N}}\left(2N + 89 - \left(\frac{46N}{7} + \frac{1073}{7}\right)\right) + B_{\bar{N}}(2N + 89 - 79) + B_{\bar{N}}(2N + 89 - N) \\
&= B_{\bar{N}}\left(-\frac{32N}{7} - \frac{450}{7}\right) + B_{\bar{N}}(2N + 10) + B_{\bar{N}}(N + 89) = 0 + \left(\frac{15N}{7} - \frac{59}{7}\right) + (2N + 5) = \frac{29\mathbf{N}}{7} - \frac{24}{7} \\
&(N \geq 87)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + \mathbf{90}) &= B_{\bar{N}}(2N + 90 - B_{\bar{N}}(2N + 89)) + B_{\bar{N}}(2N + 90 - B_{\bar{N}}(2N + 88)) + B_{\bar{N}}(2N + 90 - B_{\bar{N}}(2N + 87)) \\
&= B_{\bar{N}}\left(2N + 90 - \left(\frac{29N}{7} - \frac{24}{7}\right)\right) + B_{\bar{N}}\left(2N + 90 - \left(\frac{46N}{7} + \frac{1073}{7}\right)\right) + B_{\bar{N}}(2N + 90 - 79) \\
&= B_{\bar{N}}\left(-\frac{15N}{7} + \frac{654}{7}\right) + B_{\bar{N}}\left(-\frac{32N}{7} - \frac{443}{7}\right) + B_{\bar{N}}(2N + 11) = 0 + 0 + (N - 2) = \mathbf{N} - \mathbf{2} \\
&(N \geq 148)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + \mathbf{91}) &= B_{\bar{N}}(2N + 91 - B_{\bar{N}}(2N + 90)) + B_{\bar{N}}(2N + 91 - B_{\bar{N}}(2N + 89)) + B_{\bar{N}}(2N + 91 - B_{\bar{N}}(2N + 88)) \\
&= B_{\bar{N}}(2N + 91 - (N - 2)) + B_{\bar{N}}\left(2N + 91 - \left(\frac{29N}{7} - \frac{24}{7}\right)\right) + B_{\bar{N}}\left(2N + 91 - \left(\frac{46N}{7} + \frac{1073}{7}\right)\right) \\
&= B_{\bar{N}}(N + 93) + B_{\bar{N}}\left(-\frac{15N}{7} + \frac{661}{7}\right) + B_{\bar{N}}\left(-\frac{32N}{7} - \frac{436}{7}\right) = (N + 95) + 0 + 0 = \mathbf{N} + \mathbf{95} \\
&(N \geq 147)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + \mathbf{92}) &= B_{\bar{N}}(2N + 92 - B_{\bar{N}}(2N + 91)) + B_{\bar{N}}(2N + 92 - B_{\bar{N}}(2N + 90)) + B_{\bar{N}}(2N + 92 - B_{\bar{N}}(2N + 89)) \\
&= B_{\bar{N}}(2N + 92 - (N + 95)) + B_{\bar{N}}(2N + 92 - (N - 2)) + B_{\bar{N}}\left(2N + 92 - \left(\frac{29N}{7} - \frac{24}{7}\right)\right) \\
&= B_{\bar{N}}(N - 3) + B_{\bar{N}}(N + 94) + B_{\bar{N}}\left(-\frac{15N}{7} + \frac{668}{7}\right) = (N - 3) + 7 + 0 = \mathbf{N} + \mathbf{4} \\
&(N \geq 146)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + \mathbf{93}) &= B_{\bar{N}}(2N + 93 - B_{\bar{N}}(2N + 92)) + B_{\bar{N}}(2N + 93 - B_{\bar{N}}(2N + 91)) + B_{\bar{N}}(2N + 93 - B_{\bar{N}}(2N + 90)) \\
&= B_{\bar{N}}(2N + 93 - (N + 4)) + B_{\bar{N}}(2N + 93 - (N + 95)) + B_{\bar{N}}(2N + 93 - (N - 2)) \\
&= B_{\bar{N}}(N + 89) + B_{\bar{N}}(N - 2) + B_{\bar{N}}(N + 95) = (2N + 5) + (N - 2) + (2N + 71) = \mathbf{5N} + \mathbf{74} \\
&(N \geq 165)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 94) &= B_{\bar{N}}(2N + 94 - B_{\bar{N}}(2N + 93)) + B_{\bar{N}}(2N + 94 - B_{\bar{N}}(2N + 92)) + B_{\bar{N}}(2N + 94 - B_{\bar{N}}(2N + 91)) \\
&= B_{\bar{N}}(2N + 94 - (5N + 74)) + B_{\bar{N}}(2N + 94 - (N + 4)) + B_{\bar{N}}(2N + 94 - (N + 95)) \\
&= B_{\bar{N}}(-3N + 20) + B_{\bar{N}}(N + 90) + B_{\bar{N}}(N - 1) = 0 + (N - 2) + (N - 1) = \mathbf{2N} - \mathbf{3} \\
&(N \geq 166)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 95) &= B_{\bar{N}}(2N + 95 - B_{\bar{N}}(2N + 94)) + B_{\bar{N}}(2N + 95 - B_{\bar{N}}(2N + 93)) + B_{\bar{N}}(2N + 95 - B_{\bar{N}}(2N + 92)) \\
&= B_{\bar{N}}(2N + 95 - (2N - 3)) + B_{\bar{N}}(2N + 95 - (5N + 74)) + B_{\bar{N}}(2N + 95 - (N + 4)) \\
&= B_{\bar{N}}(98) + B_{\bar{N}}(-3N + 21) + B_{\bar{N}}(N + 91) = 98 + 0 + 93 = \mathbf{191} \\
&(N \geq 167)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 96) &= B_{\bar{N}}(2N + 96 - B_{\bar{N}}(2N + 95)) + B_{\bar{N}}(2N + 96 - B_{\bar{N}}(2N + 94)) + B_{\bar{N}}(2N + 96 - B_{\bar{N}}(2N + 93)) \\
&= B_{\bar{N}}(2N + 96 - 191) + B_{\bar{N}}(2N + 96 - (2N - 3)) + B_{\bar{N}}(2N + 96 - (5N + 74)) \\
&= B_{\bar{N}}(2N - 95) + B_{\bar{N}}(99) + B_{\bar{N}}(-3N + 22) = (N - 2) + 99 + 0 = \mathbf{N} + \mathbf{97} \\
&(N \geq 162)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 97) &= B_{\bar{N}}(2N + 97 - B_{\bar{N}}(2N + 96)) + B_{\bar{N}}(2N + 97 - B_{\bar{N}}(2N + 95)) + B_{\bar{N}}(2N + 97 - B_{\bar{N}}(2N + 94)) \\
&= B_{\bar{N}}(2N + 97 - (N + 97)) + B_{\bar{N}}(2N + 97 - 191) + B_{\bar{N}}(2N + 97 - (2N - 3)) \\
&= B_{\bar{N}}(N) + B_{\bar{N}}(2N - 94) + B_{\bar{N}}(100) = N + (N - 92) + 100 = \mathbf{2N} + \mathbf{8} \\
&(N \geq 166)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 98) &= B_{\bar{N}}(2N + 98 - B_{\bar{N}}(2N + 97)) + B_{\bar{N}}(2N + 98 - B_{\bar{N}}(2N + 96)) + B_{\bar{N}}(2N + 98 - B_{\bar{N}}(2N + 95)) \\
&= B_{\bar{N}}(2N + 98 - (2N + 8)) + B_{\bar{N}}(2N + 98 - (N + 97)) + B_{\bar{N}}(2N + 98 - 191) \\
&= B_{\bar{N}}(90) + B_{\bar{N}}(N + 1) + B_{\bar{N}}(2N - 93) = 90 + 6 + (2N - 92) = \mathbf{2N} + \mathbf{4} \\
&(N \geq 167)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 99) &= B_{\bar{N}}(2N + 99 - B_{\bar{N}}(2N + 98)) + B_{\bar{N}}(2N + 99 - B_{\bar{N}}(2N + 97)) + B_{\bar{N}}(2N + 99 - B_{\bar{N}}(2N + 96)) \\
&= B_{\bar{N}}(2N + 99 - (2N + 4)) + B_{\bar{N}}(2N + 99 - (2N + 8)) + B_{\bar{N}}(2N + 99 - (N + 97)) \\
&= B_{\bar{N}}(95) + B_{\bar{N}}(91) + B_{\bar{N}}(N + 2) = 95 + 91 + (N + 1) = \mathbf{N} + \mathbf{187} \\
&(N \geq 168)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 100) &= B_{\bar{N}}(2N + 100 - B_{\bar{N}}(2N + 99)) + B_{\bar{N}}(2N + 100 - B_{\bar{N}}(2N + 98)) + B_{\bar{N}}(2N + 100 - B_{\bar{N}}(2N + 97)) \\
&= B_{\bar{N}}(2N + 100 - (N + 187)) + B_{\bar{N}}(2N + 100 - (2N + 4)) + B_{\bar{N}}(2N + 100 - (2N + 8)) \\
&= B_{\bar{N}}(N - 87) + B_{\bar{N}}(96) + B_{\bar{N}}(92) = (N - 87) + 96 + 92 = \mathbf{N} + \mathbf{101} \\
&(N \geq 96)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 101) &= B_{\bar{N}}(2N + 101 - B_{\bar{N}}(2N + 100)) + B_{\bar{N}}(2N + 101 - B_{\bar{N}}(2N + 99)) + B_{\bar{N}}(2N + 101 - B_{\bar{N}}(2N + 98)) \\
&= B_{\bar{N}}(2N + 101 - (N + 101)) + B_{\bar{N}}(2N + 101 - (N + 187)) + B_{\bar{N}}(2N + 101 - (2N + 4)) \\
&= B_{\bar{N}}(N) + B_{\bar{N}}(N - 86) + B_{\bar{N}}(97) = N + (N - 86) + 97 = \mathbf{2N} + \mathbf{11} \\
&(N \geq 167)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 102) &= B_{\bar{N}}(2N + 102 - B_{\bar{N}}(2N + 101)) + B_{\bar{N}}(2N + 102 - B_{\bar{N}}(2N + 100)) + B_{\bar{N}}(2N + 102 - B_{\bar{N}}(2N + 99)) \\
&= B_{\bar{N}}(2N + 102 - (2N + 11)) + B_{\bar{N}}(2N + 102 - (N + 101)) + B_{\bar{N}}(2N + 102 - (N + 187)) \\
&= B_{\bar{N}}(91) + B_{\bar{N}}(N + 1) + B_{\bar{N}}(N - 85) = 91 + 6 + (N - 85) = \mathbf{N} + \mathbf{12} \\
&(N \geq 168)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 103) &= B_{\bar{N}}(2N + 103 - B_{\bar{N}}(2N + 102)) + B_{\bar{N}}(2N + 103 - B_{\bar{N}}(2N + 101)) + B_{\bar{N}}(2N + 103 - B_{\bar{N}}(2N + 100)) \\
&= B_{\bar{N}}(2N + 103 - (N + 12)) + B_{\bar{N}}(2N + 103 - (2N + 11)) + B_{\bar{N}}(2N + 103 - (N + 101)) \\
&= B_{\bar{N}}(N + 91) + B_{\bar{N}}(92) + B_{\bar{N}}(N + 2) = 93 + 92 + (N + 1) = \mathbf{N} + \mathbf{186} \\
&(N \geq 169)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 104) &= B_{\bar{N}}(2N + 104 - B_{\bar{N}}(2N + 103)) + B_{\bar{N}}(2N + 104 - B_{\bar{N}}(2N + 102)) + B_{\bar{N}}(2N + 104 - B_{\bar{N}}(2N + 101)) \\
&= B_{\bar{N}}(2N + 104 - (N + 186)) + B_{\bar{N}}(2N + 104 - (N + 12)) + B_{\bar{N}}(2N + 104 - (2N + 11)) \\
&= B_{\bar{N}}(N - 82) + B_{\bar{N}}(N + 92) + B_{\bar{N}}(93) = (N - 82) + (N + 93) + 93 = \mathbf{2N} + \mathbf{104} \\
&(N \geq 96)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 105) &= B_{\bar{N}}(2N + 105 - B_{\bar{N}}(2N + 104)) + B_{\bar{N}}(2N + 105 - B_{\bar{N}}(2N + 103)) + B_{\bar{N}}(2N + 105 - B_{\bar{N}}(2N + 102)) \\
&= B_{\bar{N}}(2N + 105 - (2N + 104)) + B_{\bar{N}}(2N + 105 - (N + 186)) + B_{\bar{N}}(2N + 105 - (N + 12)) \\
&= B_{\bar{N}}(1) + B_{\bar{N}}(N - 81) + B_{\bar{N}}(N + 93) = 1 + (N - 81) + (N + 95) = \mathbf{2N} + \mathbf{15} \\
&(N \geq 168)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 106) &= B_{\bar{N}}(2N + 106 - B_{\bar{N}}(2N + 105)) + B_{\bar{N}}(2N + 106 - B_{\bar{N}}(2N + 104)) + B_{\bar{N}}(2N + 106 - B_{\bar{N}}(2N + 103)) \\
&= B_{\bar{N}}(2N + 106 - (2N + 15)) + B_{\bar{N}}(2N + 106 - (2N + 104)) + B_{\bar{N}}(2N + 106 - (N + 186)) \\
&= B_{\bar{N}}(91) + B_{\bar{N}}(2) + B_{\bar{N}}(N - 80) = 91 + 2 + (N - 80) = \mathbf{N} + \mathbf{13} \\
&(N \geq 169)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 107) &= B_{\bar{N}}(2N + 107 - B_{\bar{N}}(2N + 106)) + B_{\bar{N}}(2N + 107 - B_{\bar{N}}(2N + 105)) + B_{\bar{N}}(2N + 107 - B_{\bar{N}}(2N + 104)) \\
&= B_{\bar{N}}(2N + 107 - (N + 13)) + B_{\bar{N}}(2N + 107 - (2N + 15)) + B_{\bar{N}}(2N + 107 - (2N + 104)) \\
&= B_{\bar{N}}(N + 94) + B_{\bar{N}}(92) + B_{\bar{N}}(3) = 7 + 92 + 3 = \mathbf{102} \\
&(N \geq 170)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 108) &= B_{\bar{N}}(2N + 108 - B_{\bar{N}}(2N + 107)) + B_{\bar{N}}(2N + 108 - B_{\bar{N}}(2N + 106)) + B_{\bar{N}}(2N + 108 - B_{\bar{N}}(2N + 105)) \\
&= B_{\bar{N}}(2N + 108 - 102) + B_{\bar{N}}(2N + 108 - (N + 13)) + B_{\bar{N}}(2N + 108 - (2N + 15)) \\
&= B_{\bar{N}}(2N + 6) + B_{\bar{N}}(N + 95) + B_{\bar{N}}(93) = 15 + (2N + 71) + 93 = \mathbf{2N} + \mathbf{179} \\
&(N \geq 111)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 109) &= B_{\bar{N}}(2N + 109 - B_{\bar{N}}(2N + 108)) + B_{\bar{N}}(2N + 109 - B_{\bar{N}}(2N + 107)) + B_{\bar{N}}(2N + 109 - B_{\bar{N}}(2N + 106)) \\
&= B_{\bar{N}}(2N + 109 - (2N + 179)) + B_{\bar{N}}(2N + 109 - 102) + B_{\bar{N}}(2N + 109 - (N + 13)) \\
&= B_{\bar{N}}(-70) + B_{\bar{N}}(2N + 7) + B_{\bar{N}}(N + 96) = 0 + (3N + 2) + (2N + 6) = \mathbf{5N} + \mathbf{8} \\
&(N \geq 169)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 110) &= B_{\bar{N}}(2N + 110 - B_{\bar{N}}(2N + 109)) + B_{\bar{N}}(2N + 110 - B_{\bar{N}}(2N + 108)) + B_{\bar{N}}(2N + 110 - B_{\bar{N}}(2N + 107)) \\
&= B_{\bar{N}}(2N + 110 - (5N + 8)) + B_{\bar{N}}(2N + 110 - (2N + 179)) + B_{\bar{N}}(2N + 110 - 102) \\
&= B_{\bar{N}}(-3N + 102) + B_{\bar{N}}(-69) + B_{\bar{N}}(2N + 8) = 0 + 0 + 15 = \mathbf{15} \\
&(N \geq 170)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 111) &= B_{\bar{N}}(2N + 111 - B_{\bar{N}}(2N + 110)) + B_{\bar{N}}(2N + 111 - B_{\bar{N}}(2N + 109)) + B_{\bar{N}}(2N + 111 - B_{\bar{N}}(2N + 108)) \\
&= B_{\bar{N}}(2N + 111 - 15) + B_{\bar{N}}(2N + 111 - (5N + 8)) + B_{\bar{N}}(2N + 111 - (2N + 179)) \\
&= B_{\bar{N}}(2N + 96) + B_{\bar{N}}(-3N + 103) + B_{\bar{N}}(-68) = (N + 97) + 0 + 0 = \mathbf{N} + \mathbf{97} \\
&(N \geq 171)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 112) &= B_{\bar{N}}(2N + 112 - B_{\bar{N}}(2N + 111)) + B_{\bar{N}}(2N + 112 - B_{\bar{N}}(2N + 110)) + B_{\bar{N}}(2N + 112 - B_{\bar{N}}(2N + 109)) \\
&= B_{\bar{N}}(2N + 112 - (N + 97)) + B_{\bar{N}}(2N + 112 - 15) + B_{\bar{N}}(2N + 112 - (5N + 8)) \\
&= B_{\bar{N}}(N + 15) + B_{\bar{N}}(2N + 97) + B_{\bar{N}}(-3N + 104) = (N + 11) + (2N + 8) + 0 = \mathbf{3N} + \mathbf{19} \\
&(N \geq 72)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 113) &= B_{\bar{N}}(2N + 113 - B_{\bar{N}}(2N + 112)) + B_{\bar{N}}(2N + 113 - B_{\bar{N}}(2N + 111)) + B_{\bar{N}}(2N + 113 - B_{\bar{N}}(2N + 110)) \\
&= B_{\bar{N}}(2N + 113 - (3N + 19)) + B_{\bar{N}}(2N + 113 - (N + 97)) + B_{\bar{N}}(2N + 113 - 15) \\
&= B_{\bar{N}}(-N + 94) + B_{\bar{N}}(N + 16) + B_{\bar{N}}(2N + 98) = 0 + 17 + (2N + 4) = \mathbf{2N} + \mathbf{21} \\
&(N \geq 170)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 114) &= B_{\bar{N}}(2N + 114 - B_{\bar{N}}(2N + 113)) + B_{\bar{N}}(2N + 114 - B_{\bar{N}}(2N + 112)) + B_{\bar{N}}(2N + 114 - B_{\bar{N}}(2N + 111)) \\
&= B_{\bar{N}}(2N + 114 - (2N + 21)) + B_{\bar{N}}(2N + 114 - (3N + 19)) + B_{\bar{N}}(2N + 114 - (N + 97)) \\
&= B_{\bar{N}}(93) + B_{\bar{N}}(-N + 95) + B_{\bar{N}}(N + 17) = 93 + 0 + (N + 13) = \mathbf{N} + \mathbf{106} \\
&(N \geq 171)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 115) &= B_{\bar{N}}(2N + 115 - B_{\bar{N}}(2N + 114)) + B_{\bar{N}}(2N + 115 - B_{\bar{N}}(2N + 113)) + B_{\bar{N}}(2N + 115 - B_{\bar{N}}(2N + 112)) \\
&= B_{\bar{N}}(2N + 115 - (N + 106)) + B_{\bar{N}}(2N + 115 - (2N + 21)) + B_{\bar{N}}(2N + 115 - (3N + 19)) \\
&= B_{\bar{N}}(N + 9) + B_{\bar{N}}(94) + B_{\bar{N}}(-N + 96) = 12 + 94 + 0 = \mathbf{106} \\
&(N \geq 172)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 116) &= B_{\bar{N}}(2N + 116 - B_{\bar{N}}(2N + 115)) + B_{\bar{N}}(2N + 116 - B_{\bar{N}}(2N + 114)) + B_{\bar{N}}(2N + 116 - B_{\bar{N}}(2N + 113)) \\
&= B_{\bar{N}}(2N + 116 - 106) + B_{\bar{N}}(2N + 116 - (N + 106)) + B_{\bar{N}}(2N + 116 - (2N + 21)) \\
&= B_{\bar{N}}(2N + 10) + B_{\bar{N}}(N + 10) + B_{\bar{N}}(95) = \left(\frac{15N}{7} - \frac{59}{7} \right) + (N + 7) + 95 = \frac{22\mathbf{N}}{7} + \frac{655}{7} \\
&(N \geq 95)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 117) &= B_{\bar{N}}(2N + 117 - B_{\bar{N}}(2N + 116)) + B_{\bar{N}}(2N + 117 - B_{\bar{N}}(2N + 115)) + B_{\bar{N}}(2N + 117 - B_{\bar{N}}(2N + 114)) \\
&= B_{\bar{N}}\left(2N + 117 - \left(\frac{22N}{7} + \frac{655}{7}\right)\right) + B_{\bar{N}}(2N + 117 - 106) + B_{\bar{N}}(2N + 117 - (N + 106)) \\
&= B_{\bar{N}}\left(-\frac{8N}{7} + \frac{164}{7}\right) + B_{\bar{N}}(2N + 11) + B_{\bar{N}}(N + 11) = 0 + (N - 2) + (N + 8) = \mathbf{2N} + \mathbf{6} \\
&(N \geq 171)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(\mathbf{2N} + \mathbf{118}) &= B_{\bar{N}}(2N + 118 - B_{\bar{N}}(2N + 117)) + B_{\bar{N}}(2N + 118 - B_{\bar{N}}(2N + 116)) + B_{\bar{N}}(2N + 118 - B_{\bar{N}}(2N + 115)) \\
&= B_{\bar{N}}(2N + 118 - (2N + 6)) + B_{\bar{N}}\left(2N + 118 - \left(\frac{22N}{7} + \frac{655}{7}\right)\right) + B_{\bar{N}}(2N + 118 - 106) \\
&= B_{\bar{N}}(112) + B_{\bar{N}}\left(-\frac{8N}{7} + \frac{171}{7}\right) + B_{\bar{N}}(2N + 12) = 112 + 0 + (N + 10) = \mathbf{N} + \mathbf{122} \\
&(N \geq 172)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(\mathbf{2N} + \mathbf{119}) &= B_{\bar{N}}(2N + 119 - B_{\bar{N}}(2N + 118)) + B_{\bar{N}}(2N + 119 - B_{\bar{N}}(2N + 117)) + B_{\bar{N}}(2N + 119 - B_{\bar{N}}(2N + 116)) \\
&= B_{\bar{N}}(2N + 119 - (N + 122)) + B_{\bar{N}}(2N + 119 - (2N + 6)) + B_{\bar{N}}\left(2N + 119 - \left(\frac{22N}{7} + \frac{655}{7}\right)\right) \\
&= B_{\bar{N}}(N - 3) + B_{\bar{N}}(113) + B_{\bar{N}}\left(-\frac{8N}{7} + \frac{178}{7}\right) = (N - 3) + 113 + 0 = \mathbf{N} + \mathbf{110} \\
&(N \geq 173)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(\mathbf{2N} + \mathbf{120}) &= B_{\bar{N}}(2N + 120 - B_{\bar{N}}(2N + 119)) + B_{\bar{N}}(2N + 120 - B_{\bar{N}}(2N + 118)) + B_{\bar{N}}(2N + 120 - B_{\bar{N}}(2N + 117)) \\
&= B_{\bar{N}}(2N + 120 - (N + 110)) + B_{\bar{N}}(2N + 120 - (N + 122)) + B_{\bar{N}}(2N + 120 - (2N + 6)) \\
&= B_{\bar{N}}(N + 10) + B_{\bar{N}}(N - 2) + B_{\bar{N}}(114) = (N + 7) + (N - 2) + 114 = \mathbf{2N} + \mathbf{119} \\
&(N \geq 144)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(\mathbf{2N} + \mathbf{121}) &= B_{\bar{N}}(2N + 121 - B_{\bar{N}}(2N + 120)) + B_{\bar{N}}(2N + 121 - B_{\bar{N}}(2N + 119)) + B_{\bar{N}}(2N + 121 - B_{\bar{N}}(2N + 118)) \\
&= B_{\bar{N}}(2N + 121 - (2N + 119)) + B_{\bar{N}}(2N + 121 - (N + 110)) + B_{\bar{N}}(2N + 121 - (N + 122)) \\
&= B_{\bar{N}}(2) + B_{\bar{N}}(N + 11) + B_{\bar{N}}(N - 1) = 2 + (N + 8) + (N - 1) = \mathbf{2N} + \mathbf{9} \\
&(N \geq 143)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + \mathbf{122}) &= B_{\bar{N}}(2N + 122 - B_{\bar{N}}(2N + 121)) + B_{\bar{N}}(2N + 122 - B_{\bar{N}}(2N + 120)) + B_{\bar{N}}(2N + 122 - B_{\bar{N}}(2N + 119)) \\
&= B_{\bar{N}}(2N + 122 - (2N + 9)) + B_{\bar{N}}(2N + 122 - (2N + 119)) + B_{\bar{N}}(2N + 122 - (N + 110)) \\
&= B_{\bar{N}}(113) + B_{\bar{N}}(3) + B_{\bar{N}}(N + 12) = 113 + 3 + (N + 9) = \mathbf{N} + \mathbf{125} \\
&(N \geq 113)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + \mathbf{123}) &= B_{\bar{N}}(2N + 123 - B_{\bar{N}}(2N + 122)) + B_{\bar{N}}(2N + 123 - B_{\bar{N}}(2N + 121)) + B_{\bar{N}}(2N + 123 - B_{\bar{N}}(2N + 120)) \\
&= B_{\bar{N}}(2N + 123 - (N + 125)) + B_{\bar{N}}(2N + 123 - (2N + 9)) + B_{\bar{N}}(2N + 123 - (2N + 119)) \\
&= B_{\bar{N}}(N - 2) + B_{\bar{N}}(114) + B_{\bar{N}}(4) = (N - 2) + 114 + 4 = \mathbf{N} + \mathbf{116} \\
&(N \geq 114)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + \mathbf{124}) &= B_{\bar{N}}(2N + 124 - B_{\bar{N}}(2N + 123)) + B_{\bar{N}}(2N + 124 - B_{\bar{N}}(2N + 122)) + B_{\bar{N}}(2N + 124 - B_{\bar{N}}(2N + 121)) \\
&= B_{\bar{N}}(2N + 124 - (N + 116)) + B_{\bar{N}}(2N + 124 - (N + 125)) + B_{\bar{N}}(2N + 124 - (2N + 9)) \\
&= B_{\bar{N}}(N + 8) + B_{\bar{N}}(N - 1) + B_{\bar{N}}(115) = (N + 6) + (N - 1) + 115 = \mathbf{2N} + \mathbf{120} \\
&(N \geq 155)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + \mathbf{125}) &= B_{\bar{N}}(2N + 125 - B_{\bar{N}}(2N + 124)) + B_{\bar{N}}(2N + 125 - B_{\bar{N}}(2N + 123)) + B_{\bar{N}}(2N + 125 - B_{\bar{N}}(2N + 122)) \\
&= B_{\bar{N}}(2N + 125 - (2N + 120)) + B_{\bar{N}}(2N + 125 - (N + 116)) + B_{\bar{N}}(2N + 125 - (N + 125)) \\
&= B_{\bar{N}}(5) + B_{\bar{N}}(N + 9) + B_{\bar{N}}(N) = 5 + 12 + N = \mathbf{N} + \mathbf{17} \\
&(\mathbf{N} \geq \mathbf{315})
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + \mathbf{126}) &= B_{\bar{N}}(2N + 126 - B_{\bar{N}}(2N + 125)) + B_{\bar{N}}(2N + 126 - B_{\bar{N}}(2N + 124)) + B_{\bar{N}}(2N + 126 - B_{\bar{N}}(2N + 123)) \\
&= B_{\bar{N}}(2N + 126 - (N + 17)) + B_{\bar{N}}(2N + 126 - (2N + 120)) + B_{\bar{N}}(2N + 126 - (N + 116)) \\
&= B_{\bar{N}}(N + 109) + B_{\bar{N}}(6) + B_{\bar{N}}(N + 10) = (2N + 75) + 6 + (N + 7) = \mathbf{3N} + \mathbf{88} \\
&(N \geq 314)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(\mathbf{2N} + \mathbf{127}) &= B_{\bar{N}}(2N + 127 - B_{\bar{N}}(2N + 126)) + B_{\bar{N}}(2N + 127 - B_{\bar{N}}(2N + 125)) + B_{\bar{N}}(2N + 127 - B_{\bar{N}}(2N + 124)) \\
&= B_{\bar{N}}(2N + 127 - (3N + 88)) + B_{\bar{N}}(2N + 127 - (N + 17)) + B_{\bar{N}}(2N + 127 - (2N + 120)) \\
&= B_{\bar{N}}(-N + 39) + B_{\bar{N}}(N + 110) + B_{\bar{N}}(7) = 0 + (2N + 8) + 7 = \mathbf{2N} + \mathbf{15} \\
&(N \geq 313)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(\mathbf{2N} + \mathbf{128}) &= B_{\bar{N}}(2N + 128 - B_{\bar{N}}(2N + 127)) + B_{\bar{N}}(2N + 128 - B_{\bar{N}}(2N + 126)) + B_{\bar{N}}(2N + 128 - B_{\bar{N}}(2N + 125)) \\
&= B_{\bar{N}}(2N + 128 - (2N + 15)) + B_{\bar{N}}(2N + 128 - (3N + 88)) + B_{\bar{N}}(2N + 128 - (N + 17)) \\
&= B_{\bar{N}}(113) + B_{\bar{N}}(-N + 40) + B_{\bar{N}}(N + 111) = 113 + 0 + (N - 2) = \mathbf{N} + \mathbf{111} \\
&(N \geq 269)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(\mathbf{2N} + \mathbf{129}) &= B_{\bar{N}}(2N + 129 - B_{\bar{N}}(2N + 128)) + B_{\bar{N}}(2N + 129 - B_{\bar{N}}(2N + 127)) + B_{\bar{N}}(2N + 129 - B_{\bar{N}}(2N + 126)) \\
&= B_{\bar{N}}(2N + 129 - (N + 111)) + B_{\bar{N}}(2N + 129 - (2N + 15)) + B_{\bar{N}}(2N + 129 - (3N + 88)) \\
&= B_{\bar{N}}(N + 18) + B_{\bar{N}}(114) + B_{\bar{N}}(-N + 41) = 18 + 114 + 0 = \mathbf{132} \\
&(N \geq 270)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(\mathbf{2N} + \mathbf{130}) &= B_{\bar{N}}(2N + 130 - B_{\bar{N}}(2N + 129)) + B_{\bar{N}}(2N + 130 - B_{\bar{N}}(2N + 128)) + B_{\bar{N}}(2N + 130 - B_{\bar{N}}(2N + 127)) \\
&= B_{\bar{N}}(2N + 130 - 132) + B_{\bar{N}}(2N + 130 - (N + 111)) + B_{\bar{N}}(2N + 130 - (2N + 15)) \\
&= B_{\bar{N}}(2N - 2) + B_{\bar{N}}(N + 19) + B_{\bar{N}}(115) = (2N - 1) + (N + 13) + 115 = \mathbf{3N} + \mathbf{127} \\
&(N \geq 159)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(\mathbf{2N} + \mathbf{131}) &= B_{\bar{N}}(2N + 131 - B_{\bar{N}}(2N + 130)) + B_{\bar{N}}(2N + 131 - B_{\bar{N}}(2N + 129)) + B_{\bar{N}}(2N + 131 - B_{\bar{N}}(2N + 128)) \\
&= B_{\bar{N}}(2N + 131 - (3N + 127)) + B_{\bar{N}}(2N + 131 - 132) + B_{\bar{N}}(2N + 131 - (N + 111)) \\
&= B_{\bar{N}}(-N + 4) + B_{\bar{N}}(2N - 1) + B_{\bar{N}}(N + 20) = 0 + (N + 6) + (N + 15) = \mathbf{2N} + \mathbf{21} \\
&(N \geq 270)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + \mathbf{132}) &= B_{\bar{N}}(2N + 132 - B_{\bar{N}}(2N + 131)) + B_{\bar{N}}(2N + 132 - B_{\bar{N}}(2N + 130)) + B_{\bar{N}}(2N + 132 - B_{\bar{N}}(2N + 129)) \\
&= B_{\bar{N}}(2N + 132 - (2N + 21)) + B_{\bar{N}}(2N + 132 - (3N + 127)) + B_{\bar{N}}(2N + 132 - 132) \\
&= B_{\bar{N}}(111) + B_{\bar{N}}(-N + 5) + B_{\bar{N}}(2N) = 111 + 0 + (N + 1) = \mathbf{N} + \mathbf{112} \\
&(N \geq 271)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + \mathbf{133}) &= B_{\bar{N}}(2N + 133 - B_{\bar{N}}(2N + 132)) + B_{\bar{N}}(2N + 133 - B_{\bar{N}}(2N + 131)) + B_{\bar{N}}(2N + 133 - B_{\bar{N}}(2N + 130)) \\
&= B_{\bar{N}}(2N + 133 - (N + 112)) + B_{\bar{N}}(2N + 133 - (2N + 21)) + B_{\bar{N}}(2N + 133 - (3N + 127)) \\
&= B_{\bar{N}}(N + 21) + B_{\bar{N}}(112) + B_{\bar{N}}(-N + 6) = (N + 16) + 112 + 0 = \mathbf{N} + \mathbf{128} \\
&(N \geq 272)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + \mathbf{134}) &= B_{\bar{N}}(2N + 134 - B_{\bar{N}}(2N + 133)) + B_{\bar{N}}(2N + 134 - B_{\bar{N}}(2N + 132)) + B_{\bar{N}}(2N + 134 - B_{\bar{N}}(2N + 131)) \\
&= B_{\bar{N}}(2N + 134 - (N + 128)) + B_{\bar{N}}(2N + 134 - (N + 112)) + B_{\bar{N}}(2N + 134 - (2N + 21)) \\
&= B_{\bar{N}}(N + 6) + B_{\bar{N}}(N + 22) + B_{\bar{N}}(113) = (N + 4) + 22 + 113 = \mathbf{N} + \mathbf{139} \\
&(N \geq 113)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + \mathbf{135}) &= B_{\bar{N}}(2N + 135 - B_{\bar{N}}(2N + 134)) + B_{\bar{N}}(2N + 135 - B_{\bar{N}}(2N + 133)) + B_{\bar{N}}(2N + 135 - B_{\bar{N}}(2N + 132)) \\
&= B_{\bar{N}}(2N + 135 - (N + 139)) + B_{\bar{N}}(2N + 135 - (N + 128)) + B_{\bar{N}}(2N + 135 - (N + 112)) \\
&= B_{\bar{N}}(N - 4) + B_{\bar{N}}(N + 7) + B_{\bar{N}}(N + 23) = (N - 4) + (N + 5) + 21 = \mathbf{2N} + \mathbf{22} \\
&(N \geq 271)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + \mathbf{136}) &= B_{\bar{N}}(2N + 136 - B_{\bar{N}}(2N + 135)) + B_{\bar{N}}(2N + 136 - B_{\bar{N}}(2N + 134)) + B_{\bar{N}}(2N + 136 - B_{\bar{N}}(2N + 133)) \\
&= B_{\bar{N}}(2N + 136 - (2N + 22)) + B_{\bar{N}}(2N + 136 - (N + 139)) + B_{\bar{N}}(2N + 136 - (N + 128)) \\
&= B_{\bar{N}}(114) + B_{\bar{N}}(N - 3) + B_{\bar{N}}(N + 8) = 114 + (N - 3) + (N + 6) = \mathbf{2N} + \mathbf{117} \\
&(N \geq 272)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 137) &= B_{\bar{N}}(2N + 137 - B_{\bar{N}}(2N + 136)) + B_{\bar{N}}(2N + 137 - B_{\bar{N}}(2N + 135)) + B_{\bar{N}}(2N + 137 - B_{\bar{N}}(2N + 134)) \\
&= B_{\bar{N}}(2N + 137 - (2N + 117)) + B_{\bar{N}}(2N + 137 - (2N + 22)) + B_{\bar{N}}(2N + 137 - (N + 139)) \\
&= B_{\bar{N}}(20) + B_{\bar{N}}(115) + B_{\bar{N}}(N - 2) = 20 + 115 + (N - 2) = \mathbf{N} + \mathbf{133} \\
&(N \geq 273)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 138) &= B_{\bar{N}}(2N + 138 - B_{\bar{N}}(2N + 137)) + B_{\bar{N}}(2N + 138 - B_{\bar{N}}(2N + 136)) + B_{\bar{N}}(2N + 138 - B_{\bar{N}}(2N + 135)) \\
&= B_{\bar{N}}(2N + 138 - (N + 133)) + B_{\bar{N}}(2N + 138 - (2N + 117)) + B_{\bar{N}}(2N + 138 - (2N + 22)) \\
&= B_{\bar{N}}(N + 5) + B_{\bar{N}}(21) + B_{\bar{N}}(116) = 9 + 21 + 116 = \mathbf{146} \\
&(N \geq 117)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 139) &= B_{\bar{N}}(2N + 139 - B_{\bar{N}}(2N + 138)) + B_{\bar{N}}(2N + 139 - B_{\bar{N}}(2N + 137)) + B_{\bar{N}}(2N + 139 - B_{\bar{N}}(2N + 136)) \\
&= B_{\bar{N}}(2N + 139 - 146) + B_{\bar{N}}(2N + 139 - (N + 133)) + B_{\bar{N}}(2N + 139 - (2N + 117)) \\
&= B_{\bar{N}}(2N - 7) + B_{\bar{N}}(N + 6) + B_{\bar{N}}(22) = 7 + (N + 4) + 22 = \mathbf{N} + \mathbf{33} \\
&(N \geq 272)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 140) &= B_{\bar{N}}(2N + 140 - B_{\bar{N}}(2N + 139)) + B_{\bar{N}}(2N + 140 - B_{\bar{N}}(2N + 138)) + B_{\bar{N}}(2N + 140 - B_{\bar{N}}(2N + 137)) \\
&= B_{\bar{N}}(2N + 140 - (N + 33)) + B_{\bar{N}}(2N + 140 - 146) + B_{\bar{N}}(2N + 140 - (N + 133)) \\
&= B_{\bar{N}}(N + 107) + B_{\bar{N}}(2N - 6) + B_{\bar{N}}(N + 7) = (N + 109) + \left(\frac{16N}{7} + \frac{295}{7} \right) + (N + 5) = \frac{30\mathbf{N}}{7} + \frac{1093}{7} \\
&(N \geq 273)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 141) &= B_{\bar{N}}(2N + 141 - B_{\bar{N}}(2N + 140)) + B_{\bar{N}}(2N + 141 - B_{\bar{N}}(2N + 139)) + B_{\bar{N}}(2N + 141 - B_{\bar{N}}(2N + 138)) \\
&= B_{\bar{N}}\left(2N + 141 - \left(\frac{30N}{7} + \frac{1093}{7}\right)\right) + B_{\bar{N}}(2N + 141 - (N + 33)) + B_{\bar{N}}(2N + 141 - 146) \\
&= B_{\bar{N}}\left(-\frac{16N}{7} - \frac{106}{7}\right) + B_{\bar{N}}(N + 108) + B_{\bar{N}}(2N - 5) = 0 + 7 + \left(\frac{15N}{7} - \frac{59}{7}\right) = \frac{15\mathbf{N}}{7} - \frac{10}{7} \\
&(N \geq 274)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 142) &= B_{\bar{N}}(2N + 142 - B_{\bar{N}}(2N + 141)) + B_{\bar{N}}(2N + 142 - B_{\bar{N}}(2N + 140)) + B_{\bar{N}}(2N + 142 - B_{\bar{N}}(2N + 139)) \\
&= B_{\bar{N}}\left(2N + 142 - \left(\frac{15N}{7} - \frac{10}{7}\right)\right) + B_{\bar{N}}\left(2N + 142 - \left(\frac{30N}{7} + \frac{1093}{7}\right)\right) + B_{\bar{N}}(2N + 142 - (N + 33)) \\
&= B_{\bar{N}}\left(-\frac{N}{7} + \frac{1004}{7}\right) + B_{\bar{N}}\left(-\frac{16N}{7} - \frac{99}{7}\right) + B_{\bar{N}}(N + 109) = 0 + 0 + (2N + 75) = \mathbf{2N} + \mathbf{75} \\
&(\mathbf{N} \geq \mathbf{1004})
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 143) &= B_{\bar{N}}(2N + 143 - B_{\bar{N}}(2N + 142)) + B_{\bar{N}}(2N + 143 - B_{\bar{N}}(2N + 141)) + B_{\bar{N}}(2N + 143 - B_{\bar{N}}(2N + 140)) \\
&= B_{\bar{N}}(2N + 143 - (2N + 75)) + B_{\bar{N}}\left(2N + 143 - \left(\frac{15N}{7} - \frac{10}{7}\right)\right) + B_{\bar{N}}\left(2N + 143 - \left(\frac{30N}{7} + \frac{1093}{7}\right)\right) \\
&= B_{\bar{N}}(68) + B_{\bar{N}}\left(-\frac{N}{7} + \frac{1011}{7}\right) + B_{\bar{N}}\left(-\frac{16N}{7} - \frac{92}{7}\right) = 68 + 0 + 0 = \mathbf{68} \\
&(\mathbf{N} \geq \mathbf{1011})
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 144) &= B_{\bar{N}}(2N + 144 - B_{\bar{N}}(2N + 143)) + B_{\bar{N}}(2N + 144 - B_{\bar{N}}(2N + 142)) + B_{\bar{N}}(2N + 144 - B_{\bar{N}}(2N + 141)) \\
&= B_{\bar{N}}(2N + 144 - 68) + B_{\bar{N}}(2N + 144 - (2N + 75)) + B_{\bar{N}}\left(2N + 144 - \left(\frac{15N}{7} - \frac{10}{7}\right)\right) \\
&= B_{\bar{N}}(2N + 76) + B_{\bar{N}}(69) + B_{\bar{N}}\left(-\frac{N}{7} + \frac{1018}{7}\right) = (2N - 8) + 69 + 0 = \mathbf{2N} + \mathbf{61} \\
&(\mathbf{N} \geq \mathbf{1018})
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 145) &= B_{\bar{N}}(2N + 145 - B_{\bar{N}}(2N + 144)) + B_{\bar{N}}(2N + 145 - B_{\bar{N}}(2N + 143)) + B_{\bar{N}}(2N + 145 - B_{\bar{N}}(2N + 142)) \\
&= B_{\bar{N}}(2N + 145 - (2N + 61)) + B_{\bar{N}}(2N + 145 - 68) + B_{\bar{N}}(2N + 145 - (2N + 75)) \\
&= B_{\bar{N}}(84) + B_{\bar{N}}(2N + 77) + B_{\bar{N}}(70) = 84 + (N + 65) + 70 = \mathbf{N} + \mathbf{219} \\
&(N \geq 275)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 146) &= B_{\bar{N}}(2N + 146 - B_{\bar{N}}(2N + 145)) + B_{\bar{N}}(2N + 146 - B_{\bar{N}}(2N + 144)) + B_{\bar{N}}(2N + 146 - B_{\bar{N}}(2N + 143)) \\
&= B_{\bar{N}}(2N + 146 - (N + 219)) + B_{\bar{N}}(2N + 146 - (2N + 61)) + B_{\bar{N}}(2N + 146 - 68) \\
&= B_{\bar{N}}(N - 73) + B_{\bar{N}}(85) + B_{\bar{N}}(2N + 78) = (N - 73) + 85 + (N + 82) = \mathbf{2N} + \mathbf{94} \\
&(N \geq 220)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 147) &= B_{\bar{N}}(2N + 147 - B_{\bar{N}}(2N + 146)) + B_{\bar{N}}(2N + 147 - B_{\bar{N}}(2N + 145)) + B_{\bar{N}}(2N + 147 - B_{\bar{N}}(2N + 144)) \\
&= B_{\bar{N}}(2N + 147 - (2N + 94)) + B_{\bar{N}}(2N + 147 - (N + 219)) + B_{\bar{N}}(2N + 147 - (2N + 61)) \\
&= B_{\bar{N}}(53) + B_{\bar{N}}(N - 72) + B_{\bar{N}}(86) = 53 + (N - 72) + 86 = \mathbf{N} + \mathbf{67} \\
&(N \geq 274)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 148) &= B_{\bar{N}}(2N + 148 - B_{\bar{N}}(2N + 147)) + B_{\bar{N}}(2N + 148 - B_{\bar{N}}(2N + 146)) + B_{\bar{N}}(2N + 148 - B_{\bar{N}}(2N + 145)) \\
&= B_{\bar{N}}(2N + 148 - (N + 67)) + B_{\bar{N}}(2N + 148 - (2N + 94)) + B_{\bar{N}}(2N + 148 - (N + 219)) \\
&= B_{\bar{N}}(N + 81) + B_{\bar{N}}(54) + B_{\bar{N}}(N - 71) = (2N + 67) + 54 + (N - 71) = \mathbf{3N} + \mathbf{50} \\
&(N \geq 275)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 149) &= B_{\bar{N}}(2N + 149 - B_{\bar{N}}(2N + 148)) + B_{\bar{N}}(2N + 149 - B_{\bar{N}}(2N + 147)) + B_{\bar{N}}(2N + 149 - B_{\bar{N}}(2N + 146)) \\
&= B_{\bar{N}}(2N + 149 - (3N + 50)) + B_{\bar{N}}(2N + 149 - (N + 67)) + B_{\bar{N}}(2N + 149 - (2N + 94)) \\
&= B_{\bar{N}}(-N + 99) + B_{\bar{N}}(N + 82) + B_{\bar{N}}(55) = 0 + (2N + 4) + 55 = \mathbf{2N} + \mathbf{59} \\
&(N \geq 276)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 150) &= B_{\bar{N}}(2N + 150 - B_{\bar{N}}(2N + 149)) + B_{\bar{N}}(2N + 150 - B_{\bar{N}}(2N + 148)) + B_{\bar{N}}(2N + 150 - B_{\bar{N}}(2N + 147)) \\
&= B_{\bar{N}}(2N + 150 - (2N + 59)) + B_{\bar{N}}(2N + 150 - (3N + 50)) + B_{\bar{N}}(2N + 150 - (N + 67)) \\
&= B_{\bar{N}}(91) + B_{\bar{N}}(-N + 100) + B_{\bar{N}}(N + 83) = 91 + 0 + (N - 2) = \mathbf{N} + \mathbf{89} \\
&(N \geq 124)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 151) &= B_{\bar{N}}(2N + 151 - B_{\bar{N}}(2N + 150)) + B_{\bar{N}}(2N + 151 - B_{\bar{N}}(2N + 149)) + B_{\bar{N}}(2N + 151 - B_{\bar{N}}(2N + 148)) \\
&= B_{\bar{N}}(2N + 151 - (N + 89)) + B_{\bar{N}}(2N + 151 - (2N + 59)) + B_{\bar{N}}(2N + 151 - (3N + 50)) \\
&= B_{\bar{N}}(N + 62) + B_{\bar{N}}(92) + B_{\bar{N}}(-N + 101) = (4N + 51) + 92 + 0 = \mathbf{4N} + \mathbf{143} \\
&(N \geq 275)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 152) &= B_{\bar{N}}(2N + 152 - B_{\bar{N}}(2N + 151)) + B_{\bar{N}}(2N + 152 - B_{\bar{N}}(2N + 150)) + B_{\bar{N}}(2N + 152 - B_{\bar{N}}(2N + 149)) \\
&= B_{\bar{N}}(2N + 152 - (4N + 143)) + B_{\bar{N}}(2N + 152 - (N + 89)) + B_{\bar{N}}(2N + 152 - (2N + 59)) \\
&= B_{\bar{N}}(-2N + 9) + B_{\bar{N}}(N + 63) + B_{\bar{N}}(93) = 0 + (2N + 14) + 93 = \mathbf{2N} + \mathbf{107} \\
&(N \geq 276)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 153) &= B_{\bar{N}}(2N + 153 - B_{\bar{N}}(2N + 152)) + B_{\bar{N}}(2N + 153 - B_{\bar{N}}(2N + 151)) + B_{\bar{N}}(2N + 153 - B_{\bar{N}}(2N + 150)) \\
&= B_{\bar{N}}(2N + 153 - (2N + 107)) + B_{\bar{N}}(2N + 153 - (4N + 143)) + B_{\bar{N}}(2N + 153 - (N + 89)) \\
&= B_{\bar{N}}(46) + B_{\bar{N}}(-2N + 10) + B_{\bar{N}}(N + 64) = 46 + 0 + (N + 4) = \mathbf{N} + \mathbf{50} \\
&(N \geq 277)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 154) &= B_{\bar{N}}(2N + 154 - B_{\bar{N}}(2N + 153)) + B_{\bar{N}}(2N + 154 - B_{\bar{N}}(2N + 152)) + B_{\bar{N}}(2N + 154 - B_{\bar{N}}(2N + 151)) \\
&= B_{\bar{N}}(2N + 154 - (N + 50)) + B_{\bar{N}}(2N + 154 - (2N + 107)) + B_{\bar{N}}(2N + 154 - (4N + 143)) \\
&= B_{\bar{N}}(N + 104) + B_{\bar{N}}(47) + B_{\bar{N}}(-2N + 11) = (N - 2) + 47 + 0 = \mathbf{N} + \mathbf{45} \\
&(N \geq 232)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 155) &= B_{\bar{N}}(2N + 155 - B_{\bar{N}}(2N + 154)) + B_{\bar{N}}(2N + 155 - B_{\bar{N}}(2N + 153)) + B_{\bar{N}}(2N + 155 - B_{\bar{N}}(2N + 152)) \\
&= B_{\bar{N}}(2N + 155 - (N + 45)) + B_{\bar{N}}(2N + 155 - (N + 50)) + B_{\bar{N}}(2N + 155 - (2N + 107)) \\
&= B_{\bar{N}}(N + 110) + B_{\bar{N}}(N + 105) + B_{\bar{N}}(48) = (2N + 8) + 107 + 48 = \mathbf{2N} + \mathbf{163} \\
&(N \geq 276)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 156) &= B_{\bar{N}}(2N + 156 - B_{\bar{N}}(2N + 155)) + B_{\bar{N}}(2N + 156 - B_{\bar{N}}(2N + 154)) + B_{\bar{N}}(2N + 156 - B_{\bar{N}}(2N + 153)) \\
&= B_{\bar{N}}(2N + 156 - (2N + 163)) + B_{\bar{N}}(2N + 156 - (N + 45)) + B_{\bar{N}}(2N + 156 - (N + 50)) \\
&= B_{\bar{N}}(-7) + B_{\bar{N}}(N + 111) + B_{\bar{N}}(N + 106) = 0 + (N - 2) + (N + 107) = \mathbf{2N} + \mathbf{105} \\
&(N \geq 277)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 157) &= B_{\bar{N}}(2N + 157 - B_{\bar{N}}(2N + 156)) + B_{\bar{N}}(2N + 157 - B_{\bar{N}}(2N + 155)) + B_{\bar{N}}(2N + 157 - B_{\bar{N}}(2N + 154)) \\
&= B_{\bar{N}}(2N + 157 - (2N + 105)) + B_{\bar{N}}(2N + 157 - (2N + 163)) + B_{\bar{N}}(2N + 157 - (N + 45)) \\
&= B_{\bar{N}}(52) + B_{\bar{N}}(-6) + B_{\bar{N}}(N + 112) = 52 + 0 + 114 = \mathbf{166} \\
&(N \geq 278)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 158) &= B_{\bar{N}}(2N + 158 - B_{\bar{N}}(2N + 157)) + B_{\bar{N}}(2N + 158 - B_{\bar{N}}(2N + 156)) + B_{\bar{N}}(2N + 158 - B_{\bar{N}}(2N + 155)) \\
&= B_{\bar{N}}(2N + 158 - 166) + B_{\bar{N}}(2N + 158 - (2N + 105)) + B_{\bar{N}}(2N + 158 - (2N + 163)) \\
&= B_{\bar{N}}(2N - 8) + B_{\bar{N}}(53) + B_{\bar{N}}(-5) = (2N - 6) + 53 + 0 = \mathbf{2N} + \mathbf{47} \\
&(N \geq 173)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 159) &= B_{\bar{N}}(2N + 159 - B_{\bar{N}}(2N + 158)) + B_{\bar{N}}(2N + 159 - B_{\bar{N}}(2N + 157)) + B_{\bar{N}}(2N + 159 - B_{\bar{N}}(2N + 156)) \\
&= B_{\bar{N}}(2N + 159 - (2N + 47)) + B_{\bar{N}}(2N + 159 - 166) + B_{\bar{N}}(2N + 159 - (2N + 105)) \\
&= B_{\bar{N}}(112) + B_{\bar{N}}(2N - 7) + B_{\bar{N}}(54) = 112 + 7 + 54 = \mathbf{173} \\
&(N \geq 277)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 160) &= B_{\bar{N}}(2N + 160 - B_{\bar{N}}(2N + 159)) + B_{\bar{N}}(2N + 160 - B_{\bar{N}}(2N + 158)) + B_{\bar{N}}(2N + 160 - B_{\bar{N}}(2N + 157)) \\
&= B_{\bar{N}}(2N + 160 - 173) + B_{\bar{N}}(2N + 160 - (2N + 47)) + B_{\bar{N}}(2N + 160 - 166) \\
&= B_{\bar{N}}(2N - 13) + B_{\bar{N}}(113) + B_{\bar{N}}(2N - 6) = \left(\frac{16N}{7} + \frac{281}{7} \right) + 113 + \left(\frac{16N}{7} + \frac{295}{7} \right) = \frac{\mathbf{32N}}{\mathbf{7}} + \frac{\mathbf{1367}}{\mathbf{7}} \\
&(N \geq 278)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(\mathbf{2N} + \mathbf{161}) &= B_{\bar{N}}(2N + 161 - B_{\bar{N}}(2N + 160)) + B_{\bar{N}}(2N + 161 - B_{\bar{N}}(2N + 159)) + B_{\bar{N}}(2N + 161 - B_{\bar{N}}(2N + 158)) \\
&= B_{\bar{N}}\left(2N + 161 - \left(\frac{32N}{7} + \frac{1367}{7}\right)\right) + B_{\bar{N}}(2N + 161 - 173) + B_{\bar{N}}(2N + 161 - (2N + 47)) \\
&= B_{\bar{N}}\left(-\frac{18N}{7} - \frac{240}{7}\right) + B_{\bar{N}}(2N - 12) + B_{\bar{N}}(114) = 0 + \left(\frac{15N}{7} - \frac{66}{7}\right) + 114 = \frac{\mathbf{15N}}{\mathbf{7}} + \frac{\mathbf{732}}{\mathbf{7}} \\
&(N \geq 279)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(\mathbf{2N} + \mathbf{162}) &= B_{\bar{N}}(2N + 162 - B_{\bar{N}}(2N + 161)) + B_{\bar{N}}(2N + 162 - B_{\bar{N}}(2N + 160)) + B_{\bar{N}}(2N + 162 - B_{\bar{N}}(2N + 159)) \\
&= B_{\bar{N}}\left(2N + 162 - \left(\frac{15N}{7} + \frac{732}{7}\right)\right) + B_{\bar{N}}\left(2N + 162 - \left(\frac{32N}{7} + \frac{1367}{7}\right)\right) + B_{\bar{N}}(2N + 162 - 173) \\
&= B_{\bar{N}}\left(-\frac{N}{7} + \frac{402}{7}\right) + B_{\bar{N}}\left(-\frac{18N}{7} - \frac{233}{7}\right) + B_{\bar{N}}(2N - 11) = 0 + 0 + (N - 2) = \mathbf{N} - \mathbf{2} \\
&(N \geq 402)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(\mathbf{2N} + \mathbf{163}) &= B_{\bar{N}}(2N + 163 - B_{\bar{N}}(2N + 162)) + B_{\bar{N}}(2N + 163 - B_{\bar{N}}(2N + 161)) + B_{\bar{N}}(2N + 163 - B_{\bar{N}}(2N + 160)) \\
&= B_{\bar{N}}(2N + 163 - (N - 2)) + B_{\bar{N}}\left(2N + 163 - \left(\frac{15N}{7} + \frac{732}{7}\right)\right) + B_{\bar{N}}\left(2N + 163 - \left(\frac{32N}{7} + \frac{1367}{7}\right)\right) \\
&= B_{\bar{N}}(N + 165) + B_{\bar{N}}\left(-\frac{N}{7} + \frac{409}{7}\right) + B_{\bar{N}}\left(-\frac{18N}{7} - \frac{226}{7}\right) = (2N + 91) + 0 + 0 = \mathbf{2N} + \mathbf{91} \\
&(N \geq 409)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(\mathbf{2N} + \mathbf{164}) &= B_{\bar{N}}(2N + 164 - B_{\bar{N}}(2N + 163)) + B_{\bar{N}}(2N + 164 - B_{\bar{N}}(2N + 162)) + B_{\bar{N}}(2N + 164 - B_{\bar{N}}(2N + 161)) \\
&= B_{\bar{N}}(2N + 164 - (2N + 91)) + B_{\bar{N}}(2N + 164 - (N - 2)) + B_{\bar{N}}\left(2N + 164 - \left(\frac{15N}{7} + \frac{732}{7}\right)\right) \\
&= B_{\bar{N}}(73) + B_{\bar{N}}(N + 166) + B_{\bar{N}}\left(-\frac{N}{7} + \frac{416}{7}\right) = 73 + (2N + 16) + 0 = \mathbf{2N} + \mathbf{89} \\
&(N \geq 416)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 165) &= B_{\bar{N}}(2N + 165 - B_{\bar{N}}(2N + 164)) + B_{\bar{N}}(2N + 165 - B_{\bar{N}}(2N + 163)) + B_{\bar{N}}(2N + 165 - B_{\bar{N}}(2N + 162)) \\
&= B_{\bar{N}}(2N + 165 - (2N + 89)) + B_{\bar{N}}(2N + 165 - (2N + 91)) + B_{\bar{N}}(2N + 165 - (N - 2)) \\
&= B_{\bar{N}}(76) + B_{\bar{N}}(74) + B_{\bar{N}}(N + 167) = 76 + 74 + (N - 2) = \mathbf{N} + 148 \\
&(N \geq 280)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 166) &= B_{\bar{N}}(2N + 166 - B_{\bar{N}}(2N + 165)) + B_{\bar{N}}(2N + 166 - B_{\bar{N}}(2N + 164)) + B_{\bar{N}}(2N + 166 - B_{\bar{N}}(2N + 163)) \\
&= B_{\bar{N}}(2N + 166 - (N + 148)) + B_{\bar{N}}(2N + 166 - (2N + 89)) + B_{\bar{N}}(2N + 166 - (2N + 91)) \\
&= B_{\bar{N}}(N + 18) + B_{\bar{N}}(77) + B_{\bar{N}}(75) = 18 + 77 + 75 = \mathbf{170} \\
&(N \geq 151)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 167) &= B_{\bar{N}}(2N + 167 - B_{\bar{N}}(2N + 166)) + B_{\bar{N}}(2N + 167 - B_{\bar{N}}(2N + 165)) + B_{\bar{N}}(2N + 167 - B_{\bar{N}}(2N + 164)) \\
&= B_{\bar{N}}(2N + 167 - 170) + B_{\bar{N}}(2N + 167 - (N + 148)) + B_{\bar{N}}(2N + 167 - (2N + 89)) \\
&= B_{\bar{N}}(2N - 3) + B_{\bar{N}}(N + 19) + B_{\bar{N}}(78) = (N - 1) + (N + 13) + 78 = \mathbf{2N} + 90 \\
&(N \geq 279)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 168) &= B_{\bar{N}}(2N + 168 - B_{\bar{N}}(2N + 167)) + B_{\bar{N}}(2N + 168 - B_{\bar{N}}(2N + 166)) + B_{\bar{N}}(2N + 168 - B_{\bar{N}}(2N + 165)) \\
&= B_{\bar{N}}(2N + 168 - (2N + 90)) + B_{\bar{N}}(2N + 168 - 170) + B_{\bar{N}}(2N + 168 - (N + 148)) \\
&= B_{\bar{N}}(78) + B_{\bar{N}}(2N - 2) + B_{\bar{N}}(N + 20) = 78 + (2N - 1) + (N + 15) = \mathbf{3N} + 92 \\
&(N \geq 280)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 169) &= B_{\bar{N}}(2N + 169 - B_{\bar{N}}(2N + 168)) + B_{\bar{N}}(2N + 169 - B_{\bar{N}}(2N + 167)) + B_{\bar{N}}(2N + 169 - B_{\bar{N}}(2N + 166)) \\
&= B_{\bar{N}}(2N + 169 - (3N + 92)) + B_{\bar{N}}(2N + 169 - (2N + 90)) + B_{\bar{N}}(2N + 169 - 170) \\
&= B_{\bar{N}}(-N + 77) + B_{\bar{N}}(79) + B_{\bar{N}}(2N - 1) = 0 + 79 + (N + 6) = \mathbf{N} + 85 \\
&(N \geq 281)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 170) &= B_{\bar{N}}(2N + 170 - B_{\bar{N}}(2N + 169)) + B_{\bar{N}}(2N + 170 - B_{\bar{N}}(2N + 168)) + B_{\bar{N}}(2N + 170 - B_{\bar{N}}(2N + 167)) \\
&= B_{\bar{N}}(2N + 170 - (N + 85)) + B_{\bar{N}}(2N + 170 - (3N + 92)) + B_{\bar{N}}(2N + 170 - (2N + 90)) \\
&= B_{\bar{N}}(N + 85) + B_{\bar{N}}(-N + 78) + B_{\bar{N}}(80) = (N + 86) + 0 + 80 = \mathbf{N} + \mathbf{166} \\
&(N \geq 151)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 171) &= B_{\bar{N}}(2N + 171 - B_{\bar{N}}(2N + 170)) + B_{\bar{N}}(2N + 171 - B_{\bar{N}}(2N + 169)) + B_{\bar{N}}(2N + 171 - B_{\bar{N}}(2N + 168)) \\
&= B_{\bar{N}}(2N + 171 - (N + 166)) + B_{\bar{N}}(2N + 171 - (N + 85)) + B_{\bar{N}}(2N + 171 - (3N + 92)) \\
&= B_{\bar{N}}(N + 5) + B_{\bar{N}}(N + 86) + B_{\bar{N}}(-N + 79) = 9 + (N + 88) + 0 = \mathbf{N} + \mathbf{97} \\
&(N \geq 280)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 172) &= B_{\bar{N}}(2N + 172 - B_{\bar{N}}(2N + 171)) + B_{\bar{N}}(2N + 172 - B_{\bar{N}}(2N + 170)) + B_{\bar{N}}(2N + 172 - B_{\bar{N}}(2N + 169)) \\
&= B_{\bar{N}}(2N + 172 - (N + 97)) + B_{\bar{N}}(2N + 172 - (N + 166)) + B_{\bar{N}}(2N + 172 - (N + 85)) \\
&= B_{\bar{N}}(N + 75) + B_{\bar{N}}(N + 6) + B_{\bar{N}}(N + 87) = (2N + 3) + (N + 4) + 7 = \mathbf{3N} + \mathbf{14} \\
&(N \geq 281)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 173) &= B_{\bar{N}}(2N + 173 - B_{\bar{N}}(2N + 172)) + B_{\bar{N}}(2N + 173 - B_{\bar{N}}(2N + 171)) + B_{\bar{N}}(2N + 173 - B_{\bar{N}}(2N + 170)) \\
&= B_{\bar{N}}(2N + 173 - (3N + 14)) + B_{\bar{N}}(2N + 173 - (N + 97)) + B_{\bar{N}}(2N + 173 - (N + 166)) \\
&= B_{\bar{N}}(-N + 159) + B_{\bar{N}}(N + 76) + B_{\bar{N}}(N + 7) = 0 + (N - 2) + (N + 5) = \mathbf{2N} + \mathbf{3} \\
&(N \geq 282)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 174) &= B_{\bar{N}}(2N + 174 - B_{\bar{N}}(2N + 173)) + B_{\bar{N}}(2N + 174 - B_{\bar{N}}(2N + 172)) + B_{\bar{N}}(2N + 174 - B_{\bar{N}}(2N + 171)) \\
&= B_{\bar{N}}(2N + 174 - (2N + 3)) + B_{\bar{N}}(2N + 174 - (3N + 14)) + B_{\bar{N}}(2N + 174 - (N + 97)) \\
&= B_{\bar{N}}(171) + B_{\bar{N}}(-N + 160) + B_{\bar{N}}(N + 77) = 171 + 0 + 79 = \mathbf{250} \\
&(N \geq 171)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 175) &= B_{\bar{N}}(2N + 175 - B_{\bar{N}}(2N + 174)) + B_{\bar{N}}(2N + 175 - B_{\bar{N}}(2N + 173)) + B_{\bar{N}}(2N + 175 - B_{\bar{N}}(2N + 172)) \\
&= B_{\bar{N}}(2N + 175 - 250) + B_{\bar{N}}(2N + 175 - (2N + 3)) + B_{\bar{N}}(2N + 175 - (3N + 14)) \\
&= B_{\bar{N}}(2N - 75) + B_{\bar{N}}(172) + B_{\bar{N}}(-N + 161) = \left(\frac{15N}{7} - \frac{129}{7} \right) + 172 + 0 = \frac{15\mathbf{N}}{7} + \frac{1075}{7} \\
&(N \geq 281)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 176) &= B_{\bar{N}}(2N + 176 - B_{\bar{N}}(2N + 175)) + B_{\bar{N}}(2N + 176 - B_{\bar{N}}(2N + 174)) + B_{\bar{N}}(2N + 176 - B_{\bar{N}}(2N + 173)) \\
&= B_{\bar{N}}\left(2N + 176 - \left(\frac{15N}{7} + \frac{1075}{7}\right)\right) + B_{\bar{N}}(2N + 176 - 250) + B_{\bar{N}}(2N + 176 - (2N + 3)) \\
&= B_{\bar{N}}\left(-\frac{N}{7} + \frac{157}{7}\right) + B_{\bar{N}}(2N - 74) + B_{\bar{N}}(173) = 0 + (N - 2) + 173 = \mathbf{N} + 171 \\
&(N \geq 282)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 177) &= B_{\bar{N}}(2N + 177 - B_{\bar{N}}(2N + 176)) + B_{\bar{N}}(2N + 177 - B_{\bar{N}}(2N + 175)) + B_{\bar{N}}(2N + 177 - B_{\bar{N}}(2N + 174)) \\
&= B_{\bar{N}}(2N + 177 - (N + 171)) + B_{\bar{N}}\left(2N + 177 - \left(\frac{15N}{7} + \frac{1075}{7}\right)\right) + B_{\bar{N}}(2N + 177 - 250) \\
&= B_{\bar{N}}(N + 6) + B_{\bar{N}}\left(-\frac{N}{7} + \frac{164}{7}\right) + B_{\bar{N}}(2N - 73) = (N + 4) + 0 + (N - 71) = 2\mathbf{N} - 67 \\
&(N \geq 283)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 178) &= B_{\bar{N}}(2N + 178 - B_{\bar{N}}(2N + 177)) + B_{\bar{N}}(2N + 178 - B_{\bar{N}}(2N + 176)) + B_{\bar{N}}(2N + 178 - B_{\bar{N}}(2N + 175)) \\
&= B_{\bar{N}}(2N + 178 - (2N - 67)) + B_{\bar{N}}(2N + 178 - (N + 171)) + B_{\bar{N}}\left(2N + 178 - \left(\frac{15N}{7} + \frac{1075}{7}\right)\right) \\
&= B_{\bar{N}}(245) + B_{\bar{N}}(N + 7) + B_{\bar{N}}\left(-\frac{N}{7} + \frac{171}{7}\right) = 245 + (N + 5) + 0 = \mathbf{N} + 250 \\
&(N \geq 245)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 179) &= B_{\bar{N}}(2N + 179 - B_{\bar{N}}(2N + 178)) + B_{\bar{N}}(2N + 179 - B_{\bar{N}}(2N + 177)) + B_{\bar{N}}(2N + 179 - B_{\bar{N}}(2N + 176)) \\
&= B_{\bar{N}}(2N + 179 - (N + 250)) + B_{\bar{N}}(2N + 179 - (2N - 67)) + B_{\bar{N}}(2N + 179 - (N + 171)) \\
&= B_{\bar{N}}(N - 71) + B_{\bar{N}}(246) + B_{\bar{N}}(N + 8) = (N - 71) + 246 + (N + 6) = \mathbf{2N} + \mathbf{181} \\
&(N \geq 282)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 180) &= B_{\bar{N}}(2N + 180 - B_{\bar{N}}(2N + 179)) + B_{\bar{N}}(2N + 180 - B_{\bar{N}}(2N + 178)) + B_{\bar{N}}(2N + 180 - B_{\bar{N}}(2N + 177)) \\
&= B_{\bar{N}}(2N + 180 - (2N + 181)) + B_{\bar{N}}(2N + 180 - (N + 250)) + B_{\bar{N}}(2N + 180 - (2N - 67)) \\
&= B_{\bar{N}}(-1) + B_{\bar{N}}(N - 70) + B_{\bar{N}}(247) = 0 + (N - 70) + 247 = \mathbf{N} + \mathbf{177} \\
&(N \geq 283)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 181) &= B_{\bar{N}}(2N + 181 - B_{\bar{N}}(2N + 180)) + B_{\bar{N}}(2N + 181 - B_{\bar{N}}(2N + 179)) + B_{\bar{N}}(2N + 181 - B_{\bar{N}}(2N + 178)) \\
&= B_{\bar{N}}(2N + 181 - (N + 177)) + B_{\bar{N}}(2N + 181 - (2N + 181)) + B_{\bar{N}}(2N + 181 - (N + 250)) \\
&= B_{\bar{N}}(N + 4) + B_{\bar{N}}(0) + B_{\bar{N}}(N - 69) = (N + 3) + 0 + (N - 69) = \mathbf{2N} - \mathbf{66} \\
&(N \geq 284)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 182) &= B_{\bar{N}}(2N + 182 - B_{\bar{N}}(2N + 181)) + B_{\bar{N}}(2N + 182 - B_{\bar{N}}(2N + 180)) + B_{\bar{N}}(2N + 182 - B_{\bar{N}}(2N + 179)) \\
&= B_{\bar{N}}(2N + 182 - (2N - 66)) + B_{\bar{N}}(2N + 182 - (N + 177)) + B_{\bar{N}}(2N + 182 - (2N + 181)) \\
&= B_{\bar{N}}(248) + B_{\bar{N}}(N + 5) + B_{\bar{N}}(1) = 248 + 9 + 1 = \mathbf{258} \\
&(N \geq 248)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 183) &= B_{\bar{N}}(2N + 183 - B_{\bar{N}}(2N + 182)) + B_{\bar{N}}(2N + 183 - B_{\bar{N}}(2N + 181)) + B_{\bar{N}}(2N + 183 - B_{\bar{N}}(2N + 180)) \\
&= B_{\bar{N}}(2N + 183 - 258) + B_{\bar{N}}(2N + 183 - (2N - 66)) + B_{\bar{N}}(2N + 183 - (N + 177)) \\
&= B_{\bar{N}}(2N - 75) + B_{\bar{N}}(249) + B_{\bar{N}}(N + 6) = \left(\frac{15N}{7} - \frac{129}{7} \right) + 249 + (N + 4) = \frac{22\mathbf{N}}{7} + \frac{1642}{7} \\
&(N \geq 283)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 184) &= B_{\bar{N}}(2N + 184 - B_{\bar{N}}(2N + 183)) + B_{\bar{N}}(2N + 184 - B_{\bar{N}}(2N + 182)) + B_{\bar{N}}(2N + 184 - B_{\bar{N}}(2N + 181)) \\
&= B_{\bar{N}}\left(2N + 184 - \left(\frac{22N}{7} + \frac{1642}{7}\right)\right) + B_{\bar{N}}(2N + 184 - 258) + B_{\bar{N}}(2N + 184 - (2N - 66)) \\
&= B_{\bar{N}}\left(-\frac{8N}{7} - \frac{354}{7}\right) + B_{\bar{N}}(2N - 74) + B_{\bar{N}}(250) = 0 + (N - 2) + 250 = \mathbf{N} + \mathbf{248} \\
&(N \geq 284)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 185) &= B_{\bar{N}}(2N + 185 - B_{\bar{N}}(2N + 184)) + B_{\bar{N}}(2N + 185 - B_{\bar{N}}(2N + 183)) + B_{\bar{N}}(2N + 185 - B_{\bar{N}}(2N + 182)) \\
&= B_{\bar{N}}(2N + 185 - (N + 248)) + B_{\bar{N}}\left(2N + 185 - \left(\frac{22N}{7} + \frac{1642}{7}\right)\right) + B_{\bar{N}}(2N + 185 - 258) \\
&= B_{\bar{N}}(N - 63) + B_{\bar{N}}\left(-\frac{8N}{7} - \frac{347}{7}\right) + B_{\bar{N}}(2N - 73) = (N - 63) + 0 + (N - 71) = \mathbf{2N} - \mathbf{134} \\
&(N \geq 285)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 186) &= B_{\bar{N}}(2N + 186 - B_{\bar{N}}(2N + 185)) + B_{\bar{N}}(2N + 186 - B_{\bar{N}}(2N + 184)) + B_{\bar{N}}(2N + 186 - B_{\bar{N}}(2N + 183)) \\
&= B_{\bar{N}}(2N + 186 - (2N - 134)) + B_{\bar{N}}(2N + 186 - (N + 248)) + B_{\bar{N}}\left(2N + 186 - \left(\frac{22N}{7} + \frac{1642}{7}\right)\right) \\
&= B_{\bar{N}}(320) + B_{\bar{N}}(N - 62) + B_{\bar{N}}\left(-\frac{8N}{7} - \frac{340}{7}\right) = 320 + (N - 62) + 0 = \mathbf{N} + \mathbf{258} \\
&(N \geq 320)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 187) &= B_{\bar{N}}(2N + 187 - B_{\bar{N}}(2N + 186)) + B_{\bar{N}}(2N + 187 - B_{\bar{N}}(2N + 185)) + B_{\bar{N}}(2N + 187 - B_{\bar{N}}(2N + 184)) \\
&= B_{\bar{N}}(2N + 187 - (N + 258)) + B_{\bar{N}}(2N + 187 - (2N - 134)) + B_{\bar{N}}(2N + 187 - (N + 248)) \\
&= B_{\bar{N}}(N - 71) + B_{\bar{N}}(321) + B_{\bar{N}}(N - 61) = (N - 71) + 321 + (N - 61) = \mathbf{2N} + \mathbf{189} \\
&(N \geq 321)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 188) &= B_{\bar{N}}(2N + 188 - B_{\bar{N}}(2N + 187)) + B_{\bar{N}}(2N + 188 - B_{\bar{N}}(2N + 186)) + B_{\bar{N}}(2N + 188 - B_{\bar{N}}(2N + 185)) \\
&= B_{\bar{N}}(2N + 188 - (2N + 189)) + B_{\bar{N}}(2N + 188 - (N + 258)) + B_{\bar{N}}(2N + 188 - (2N - 134)) \\
&= B_{\bar{N}}(-1) + B_{\bar{N}}(N - 70) + B_{\bar{N}}(322) = 0 + (N - 70) + 322 = \mathbf{N} + \mathbf{252} \\
&(N \geq 322)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 189) &= B_{\bar{N}}(2N + 189 - B_{\bar{N}}(2N + 188)) + B_{\bar{N}}(2N + 189 - B_{\bar{N}}(2N + 187)) + B_{\bar{N}}(2N + 189 - B_{\bar{N}}(2N + 186)) \\
&= B_{\bar{N}}(2N + 189 - (N + 252)) + B_{\bar{N}}(2N + 189 - (2N + 189)) + B_{\bar{N}}(2N + 189 - (N + 258)) \\
&= B_{\bar{N}}(N - 63) + B_{\bar{N}}(0) + B_{\bar{N}}(N - 69) = (N - 63) + 0 + (N - 69) = \mathbf{2N} - \mathbf{132} \\
&(N \geq 286)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 190) &= B_{\bar{N}}(2N + 190 - B_{\bar{N}}(2N + 189)) + B_{\bar{N}}(2N + 190 - B_{\bar{N}}(2N + 188)) + B_{\bar{N}}(2N + 190 - B_{\bar{N}}(2N + 187)) \\
&= B_{\bar{N}}(2N + 190 - (2N - 132)) + B_{\bar{N}}(2N + 190 - (N + 252)) + B_{\bar{N}}(2N + 190 - (2N + 189)) \\
&= B_{\bar{N}}(322) + B_{\bar{N}}(N - 62) + B_{\bar{N}}(1) = 322 + (N - 62) + 1 = \mathbf{N} + \mathbf{261} \\
&(N \geq 322)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 191) &= B_{\bar{N}}(2N + 191 - B_{\bar{N}}(2N + 190)) + B_{\bar{N}}(2N + 191 - B_{\bar{N}}(2N + 189)) + B_{\bar{N}}(2N + 191 - B_{\bar{N}}(2N + 188)) \\
&= B_{\bar{N}}(2N + 191 - (N + 261)) + B_{\bar{N}}(2N + 191 - (2N - 132)) + B_{\bar{N}}(2N + 191 - (N + 252)) \\
&= B_{\bar{N}}(N - 70) + B_{\bar{N}}(323) + B_{\bar{N}}(N - 61) = (N - 70) + 323 + (N - 61) = \mathbf{2N} + \mathbf{192} \\
&(N \geq 323)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 192) &= B_{\bar{N}}(2N + 192 - B_{\bar{N}}(2N + 191)) + B_{\bar{N}}(2N + 192 - B_{\bar{N}}(2N + 190)) + B_{\bar{N}}(2N + 192 - B_{\bar{N}}(2N + 189)) \\
&= B_{\bar{N}}(2N + 192 - (2N + 192)) + B_{\bar{N}}(2N + 192 - (N + 261)) + B_{\bar{N}}(2N + 192 - (2N - 132)) \\
&= B_{\bar{N}}(0) + B_{\bar{N}}(N - 69) + B_{\bar{N}}(324) = 0 + (N - 69) + 324 = \mathbf{N} + \mathbf{255} \\
&(N \geq 324)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 193) &= B_{\bar{N}}(2N + 193 - B_{\bar{N}}(2N + 192)) + B_{\bar{N}}(2N + 193 - B_{\bar{N}}(2N + 191)) + B_{\bar{N}}(2N + 193 - B_{\bar{N}}(2N + 190)) \\
&= B_{\bar{N}}(2N + 193 - (N + 255)) + B_{\bar{N}}(2N + 193 - (2N + 192)) + B_{\bar{N}}(2N + 193 - (N + 261)) \\
&= B_{\bar{N}}(N - 62) + B_{\bar{N}}(1) + B_{\bar{N}}(N - 68) = (N - 62) + 1 + (N - 68) = \mathbf{2N} - \mathbf{129} \\
&(N \geq 287)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 194) &= B_{\bar{N}}(2N + 194 - B_{\bar{N}}(2N + 193)) + B_{\bar{N}}(2N + 194 - B_{\bar{N}}(2N + 192)) + B_{\bar{N}}(2N + 194 - B_{\bar{N}}(2N + 191)) \\
&= B_{\bar{N}}(2N + 194 - (2N - 129)) + B_{\bar{N}}(2N + 194 - (N + 255)) + B_{\bar{N}}(2N + 194 - (2N + 192)) \\
&= B_{\bar{N}}(323) + B_{\bar{N}}(N - 61) + B_{\bar{N}}(2) = 323 + (N - 61) + 2 = \mathbf{N} + \mathbf{264} \\
&(N \geq 323)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 195) &= B_{\bar{N}}(2N + 195 - B_{\bar{N}}(2N + 194)) + B_{\bar{N}}(2N + 195 - B_{\bar{N}}(2N + 193)) + B_{\bar{N}}(2N + 195 - B_{\bar{N}}(2N + 192)) \\
&= B_{\bar{N}}(2N + 195 - (N + 264)) + B_{\bar{N}}(2N + 195 - (2N - 129)) + B_{\bar{N}}(2N + 195 - (N + 255)) \\
&= B_{\bar{N}}(N - 69) + B_{\bar{N}}(324) + B_{\bar{N}}(N - 60) = (N - 69) + 324 + (N - 60) = \mathbf{2N} + \mathbf{195} \\
&(N \geq 324)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 196) &= B_{\bar{N}}(2N + 196 - B_{\bar{N}}(2N + 195)) + B_{\bar{N}}(2N + 196 - B_{\bar{N}}(2N + 194)) + B_{\bar{N}}(2N + 196 - B_{\bar{N}}(2N + 193)) \\
&= B_{\bar{N}}(2N + 196 - (2N + 195)) + B_{\bar{N}}(2N + 196 - (N + 264)) + B_{\bar{N}}(2N + 196 - (2N - 129)) \\
&= B_{\bar{N}}(1) + B_{\bar{N}}(N - 68) + B_{\bar{N}}(325) = 1 + (N - 68) + 325 = \mathbf{N} + \mathbf{258} \\
&(N \geq 325)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 197) &= B_{\bar{N}}(2N + 197 - B_{\bar{N}}(2N + 196)) + B_{\bar{N}}(2N + 197 - B_{\bar{N}}(2N + 195)) + B_{\bar{N}}(2N + 197 - B_{\bar{N}}(2N + 194)) \\
&= B_{\bar{N}}(2N + 197 - (N + 258)) + B_{\bar{N}}(2N + 197 - (2N + 195)) + B_{\bar{N}}(2N + 197 - (N + 264)) \\
&= B_{\bar{N}}(N - 61) + B_{\bar{N}}(2) + B_{\bar{N}}(N - 67) = (N - 61) + 2 + (N - 67) = \mathbf{2N} - \mathbf{126} \\
&(N \geq 288)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 198) &= B_{\bar{N}}(2N + 198 - B_{\bar{N}}(2N + 197)) + B_{\bar{N}}(2N + 198 - B_{\bar{N}}(2N + 196)) + B_{\bar{N}}(2N + 198 - B_{\bar{N}}(2N + 195)) \\
&= B_{\bar{N}}(2N + 198 - (2N - 126)) + B_{\bar{N}}(2N + 198 - (N + 258)) + B_{\bar{N}}(2N + 198 - (2N + 195)) \\
&= B_{\bar{N}}(324) + B_{\bar{N}}(N - 60) + B_{\bar{N}}(3) = 324 + (N - 60) + 3 = \mathbf{N} + \mathbf{267} \\
&(N \geq 324)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 199) &= B_{\bar{N}}(2N + 199 - B_{\bar{N}}(2N + 198)) + B_{\bar{N}}(2N + 199 - B_{\bar{N}}(2N + 197)) + B_{\bar{N}}(2N + 199 - B_{\bar{N}}(2N + 196)) \\
&= B_{\bar{N}}(2N + 199 - (N + 267)) + B_{\bar{N}}(2N + 199 - (2N - 126)) + B_{\bar{N}}(2N + 199 - (N + 258)) \\
&= B_{\bar{N}}(N - 68) + B_{\bar{N}}(325) + B_{\bar{N}}(N - 59) = (N - 68) + 325 + (N - 59) = \mathbf{2N} + \mathbf{198} \\
&(N \geq 325)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 200) &= B_{\bar{N}}(2N + 200 - B_{\bar{N}}(2N + 199)) + B_{\bar{N}}(2N + 200 - B_{\bar{N}}(2N + 198)) + B_{\bar{N}}(2N + 200 - B_{\bar{N}}(2N + 197)) \\
&= B_{\bar{N}}(2N + 200 - (2N + 198)) + B_{\bar{N}}(2N + 200 - (N + 267)) + B_{\bar{N}}(2N + 200 - (2N - 126)) \\
&= B_{\bar{N}}(2) + B_{\bar{N}}(N - 67) + B_{\bar{N}}(326) = 2 + (N - 67) + 326 = \mathbf{N} + \mathbf{261} \\
&(N \geq 326)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 201) &= B_{\bar{N}}(2N + 201 - B_{\bar{N}}(2N + 200)) + B_{\bar{N}}(2N + 201 - B_{\bar{N}}(2N + 199)) + B_{\bar{N}}(2N + 201 - B_{\bar{N}}(2N + 198)) \\
&= B_{\bar{N}}(2N + 201 - (N + 261)) + B_{\bar{N}}(2N + 201 - (2N + 198)) + B_{\bar{N}}(2N + 201 - (N + 267)) \\
&= B_{\bar{N}}(N - 60) + B_{\bar{N}}(3) + B_{\bar{N}}(N - 66) = (N - 60) + 3 + (N - 66) = \mathbf{2N} - \mathbf{123} \\
&(N \geq 289)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 202) &= B_{\bar{N}}(2N + 202 - B_{\bar{N}}(2N + 201)) + B_{\bar{N}}(2N + 202 - B_{\bar{N}}(2N + 200)) + B_{\bar{N}}(2N + 202 - B_{\bar{N}}(2N + 199)) \\
&= B_{\bar{N}}(2N + 202 - (2N - 123)) + B_{\bar{N}}(2N + 202 - (N + 261)) + B_{\bar{N}}(2N + 202 - (2N + 198)) \\
&= B_{\bar{N}}(325) + B_{\bar{N}}(N - 59) + B_{\bar{N}}(4) = 325 + (N - 59) + 4 = \mathbf{N} + \mathbf{270} \\
&(N \geq 325)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(\mathbf{2N} + \mathbf{203}) &= B_{\bar{N}}(2N + 203 - B_{\bar{N}}(2N + 202)) + B_{\bar{N}}(2N + 203 - B_{\bar{N}}(2N + 201)) + B_{\bar{N}}(2N + 203 - B_{\bar{N}}(2N + 200)) \\
&= B_{\bar{N}}(2N + 203 - (N + 270)) + B_{\bar{N}}(2N + 203 - (2N - 123)) + B_{\bar{N}}(2N + 203 - (N + 261)) \\
&= B_{\bar{N}}(N - 67) + B_{\bar{N}}(326) + B_{\bar{N}}(N - 58) = (N - 67) + 326 + (N - 58) = \mathbf{2N} + \mathbf{201} \\
&(N \geq 326)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(\mathbf{2N} + \mathbf{204}) &= B_{\bar{N}}(2N + 204 - B_{\bar{N}}(2N + 203)) + B_{\bar{N}}(2N + 204 - B_{\bar{N}}(2N + 202)) + B_{\bar{N}}(2N + 204 - B_{\bar{N}}(2N + 201)) \\
&= B_{\bar{N}}(2N + 204 - (2N + 201)) + B_{\bar{N}}(2N + 204 - (N + 270)) + B_{\bar{N}}(2N + 204 - (2N - 123)) \\
&= B_{\bar{N}}(3) + B_{\bar{N}}(N - 66) + B_{\bar{N}}(327) = 3 + (N - 66) + 327 = \mathbf{N} + \mathbf{264} \\
&(N \geq 327)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(\mathbf{2N} + \mathbf{205}) &= B_{\bar{N}}(2N + 205 - B_{\bar{N}}(2N + 204)) + B_{\bar{N}}(2N + 205 - B_{\bar{N}}(2N + 203)) + B_{\bar{N}}(2N + 205 - B_{\bar{N}}(2N + 202)) \\
&= B_{\bar{N}}(2N + 205 - (N + 264)) + B_{\bar{N}}(2N + 205 - (2N + 201)) + B_{\bar{N}}(2N + 205 - (N + 270)) \\
&= B_{\bar{N}}(N - 59) + B_{\bar{N}}(4) + B_{\bar{N}}(N - 65) = (N - 59) + 4 + (N - 65) = \mathbf{2N} - \mathbf{120} \\
&(N \geq 290)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(\mathbf{2N} + \mathbf{206}) &= B_{\bar{N}}(2N + 206 - B_{\bar{N}}(2N + 205)) + B_{\bar{N}}(2N + 206 - B_{\bar{N}}(2N + 204)) + B_{\bar{N}}(2N + 206 - B_{\bar{N}}(2N + 203)) \\
&= B_{\bar{N}}(2N + 206 - (2N - 120)) + B_{\bar{N}}(2N + 206 - (N + 264)) + B_{\bar{N}}(2N + 206 - (2N + 201)) \\
&= B_{\bar{N}}(326) + B_{\bar{N}}(N - 58) + B_{\bar{N}}(5) = 326 + (N - 58) + 5 = \mathbf{N} + \mathbf{273} \\
&(N \geq 326)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(\mathbf{2N} + \mathbf{207}) &= B_{\bar{N}}(2N + 207 - B_{\bar{N}}(2N + 206)) + B_{\bar{N}}(2N + 207 - B_{\bar{N}}(2N + 205)) + B_{\bar{N}}(2N + 207 - B_{\bar{N}}(2N + 204)) \\
&= B_{\bar{N}}(2N + 207 - (N + 273)) + B_{\bar{N}}(2N + 207 - (2N - 120)) + B_{\bar{N}}(2N + 207 - (N + 264)) \\
&= B_{\bar{N}}(N - 66) + B_{\bar{N}}(327) + B_{\bar{N}}(N - 57) = (N - 66) + 327 + (N - 57) = \mathbf{2N} + \mathbf{204} \\
&(N \geq 327)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(\mathbf{2N} + \mathbf{208}) &= B_{\bar{N}}(2N + 208 - B_{\bar{N}}(2N + 207)) + B_{\bar{N}}(2N + 208 - B_{\bar{N}}(2N + 206)) + B_{\bar{N}}(2N + 208 - B_{\bar{N}}(2N + 205)) \\
&= B_{\bar{N}}(2N + 208 - (2N + 204)) + B_{\bar{N}}(2N + 208 - (N + 273)) + B_{\bar{N}}(2N + 208 - (2N - 120)) \\
&= B_{\bar{N}}(4) + B_{\bar{N}}(N - 65) + B_{\bar{N}}(328) = 4 + (N - 65) + 328 = \mathbf{N} + \mathbf{267} \\
&(N \geq 328)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(\mathbf{2N} + \mathbf{209}) &= B_{\bar{N}}(2N + 209 - B_{\bar{N}}(2N + 208)) + B_{\bar{N}}(2N + 209 - B_{\bar{N}}(2N + 207)) + B_{\bar{N}}(2N + 209 - B_{\bar{N}}(2N + 206)) \\
&= B_{\bar{N}}(2N + 209 - (N + 267)) + B_{\bar{N}}(2N + 209 - (2N + 204)) + B_{\bar{N}}(2N + 209 - (N + 273)) \\
&= B_{\bar{N}}(N - 58) + B_{\bar{N}}(5) + B_{\bar{N}}(N - 64) = (N - 58) + 5 + (N - 64) = \mathbf{2N} - \mathbf{117} \\
&(N \geq 291)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(\mathbf{2N} + \mathbf{210}) &= B_{\bar{N}}(2N + 210 - B_{\bar{N}}(2N + 209)) + B_{\bar{N}}(2N + 210 - B_{\bar{N}}(2N + 208)) + B_{\bar{N}}(2N + 210 - B_{\bar{N}}(2N + 207)) \\
&= B_{\bar{N}}(2N + 210 - (2N - 117)) + B_{\bar{N}}(2N + 210 - (N + 267)) + B_{\bar{N}}(2N + 210 - (2N + 204)) \\
&= B_{\bar{N}}(327) + B_{\bar{N}}(N - 57) + B_{\bar{N}}(6) = 327 + (N - 57) + 6 = \mathbf{N} + \mathbf{276} \\
&(N \geq 327)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(\mathbf{2N} + \mathbf{211}) &= B_{\bar{N}}(2N + 211 - B_{\bar{N}}(2N + 210)) + B_{\bar{N}}(2N + 211 - B_{\bar{N}}(2N + 209)) + B_{\bar{N}}(2N + 211 - B_{\bar{N}}(2N + 208)) \\
&= B_{\bar{N}}(2N + 211 - (N + 276)) + B_{\bar{N}}(2N + 211 - (2N - 117)) + B_{\bar{N}}(2N + 211 - (N + 267)) \\
&= B_{\bar{N}}(N - 65) + B_{\bar{N}}(328) + B_{\bar{N}}(N - 56) = (N - 65) + 328 + (N - 56) = \mathbf{2N} + \mathbf{207} \\
&(N \geq 328)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(\mathbf{2N} + \mathbf{212}) &= B_{\bar{N}}(2N + 212 - B_{\bar{N}}(2N + 211)) + B_{\bar{N}}(2N + 212 - B_{\bar{N}}(2N + 210)) + B_{\bar{N}}(2N + 212 - B_{\bar{N}}(2N + 209)) \\
&= B_{\bar{N}}(2N + 212 - (2N + 207)) + B_{\bar{N}}(2N + 212 - (N + 276)) + B_{\bar{N}}(2N + 212 - (2N - 117)) \\
&= B_{\bar{N}}(5) + B_{\bar{N}}(N - 64) + B_{\bar{N}}(329) = 5 + (N - 64) + 329 = \mathbf{N} + \mathbf{270} \\
&(N \geq 329)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(\mathbf{2N} + \mathbf{213}) &= B_{\bar{N}}(2N + 213 - B_{\bar{N}}(2N + 212)) + B_{\bar{N}}(2N + 213 - B_{\bar{N}}(2N + 211)) + B_{\bar{N}}(2N + 213 - B_{\bar{N}}(2N + 210)) \\
&= B_{\bar{N}}(2N + 213 - (N + 270)) + B_{\bar{N}}(2N + 213 - (2N + 207)) + B_{\bar{N}}(2N + 213 - (N + 276)) \\
&= B_{\bar{N}}(N - 57) + B_{\bar{N}}(6) + B_{\bar{N}}(N - 63) = (N - 57) + 6 + (N - 63) = \mathbf{2N} - \mathbf{114} \\
&(N \geq 292)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(\mathbf{2N} + \mathbf{214}) &= B_{\bar{N}}(2N + 214 - B_{\bar{N}}(2N + 213)) + B_{\bar{N}}(2N + 214 - B_{\bar{N}}(2N + 212)) + B_{\bar{N}}(2N + 214 - B_{\bar{N}}(2N + 211)) \\
&= B_{\bar{N}}(2N + 214 - (2N - 114)) + B_{\bar{N}}(2N + 214 - (N + 270)) + B_{\bar{N}}(2N + 214 - (2N + 207)) \\
&= B_{\bar{N}}(328) + B_{\bar{N}}(N - 56) + B_{\bar{N}}(7) = 328 + (N - 56) + 7 = \mathbf{N} + \mathbf{279} \\
&(N \geq 328)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(\mathbf{2N} + \mathbf{215}) &= B_{\bar{N}}(2N + 215 - B_{\bar{N}}(2N + 214)) + B_{\bar{N}}(2N + 215 - B_{\bar{N}}(2N + 213)) + B_{\bar{N}}(2N + 215 - B_{\bar{N}}(2N + 212)) \\
&= B_{\bar{N}}(2N + 215 - (N + 279)) + B_{\bar{N}}(2N + 215 - (2N - 114)) + B_{\bar{N}}(2N + 215 - (N + 270)) \\
&= B_{\bar{N}}(N - 64) + B_{\bar{N}}(329) + B_{\bar{N}}(N - 55) = (N - 64) + 329 + (N - 55) = \mathbf{2N} + \mathbf{210} \\
&(N \geq 329)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(\mathbf{2N} + \mathbf{216}) &= B_{\bar{N}}(2N + 216 - B_{\bar{N}}(2N + 215)) + B_{\bar{N}}(2N + 216 - B_{\bar{N}}(2N + 214)) + B_{\bar{N}}(2N + 216 - B_{\bar{N}}(2N + 213)) \\
&= B_{\bar{N}}(2N + 216 - (2N + 210)) + B_{\bar{N}}(2N + 216 - (N + 279)) + B_{\bar{N}}(2N + 216 - (2N - 114)) \\
&= B_{\bar{N}}(6) + B_{\bar{N}}(N - 63) + B_{\bar{N}}(330) = 6 + (N - 63) + 330 = \mathbf{N} + \mathbf{273} \\
&(N \geq 330)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(\mathbf{2N} + \mathbf{217}) &= B_{\bar{N}}(2N + 217 - B_{\bar{N}}(2N + 216)) + B_{\bar{N}}(2N + 217 - B_{\bar{N}}(2N + 215)) + B_{\bar{N}}(2N + 217 - B_{\bar{N}}(2N + 214)) \\
&= B_{\bar{N}}(2N + 217 - (N + 273)) + B_{\bar{N}}(2N + 217 - (2N + 210)) + B_{\bar{N}}(2N + 217 - (N + 279)) \\
&= B_{\bar{N}}(N - 56) + B_{\bar{N}}(7) + B_{\bar{N}}(N - 62) = (N - 56) + 7 + (N - 62) = \mathbf{2N} - \mathbf{111} \\
&(N \geq 293)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(\mathbf{2N} + \mathbf{218}) &= B_{\bar{N}}(2N + 218 - B_{\bar{N}}(2N + 217)) + B_{\bar{N}}(2N + 218 - B_{\bar{N}}(2N + 216)) + B_{\bar{N}}(2N + 218 - B_{\bar{N}}(2N + 215)) \\
&= B_{\bar{N}}(2N + 218 - (2N - 111)) + B_{\bar{N}}(2N + 218 - (N + 273)) + B_{\bar{N}}(2N + 218 - (2N + 210)) \\
&= B_{\bar{N}}(329) + B_{\bar{N}}(N - 55) + B_{\bar{N}}(8) = 329 + (N - 55) + 8 = \mathbf{N} + \mathbf{282} \\
&(N \geq 329)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(\mathbf{2N} + \mathbf{219}) &= B_{\bar{N}}(2N + 219 - B_{\bar{N}}(2N + 218)) + B_{\bar{N}}(2N + 219 - B_{\bar{N}}(2N + 217)) + B_{\bar{N}}(2N + 219 - B_{\bar{N}}(2N + 216)) \\
&= B_{\bar{N}}(2N + 219 - (N + 282)) + B_{\bar{N}}(2N + 219 - (2N - 111)) + B_{\bar{N}}(2N + 219 - (N + 273)) \\
&= B_{\bar{N}}(N - 63) + B_{\bar{N}}(330) + B_{\bar{N}}(N - 54) = (N - 63) + 330 + (N - 54) = \mathbf{2N} + \mathbf{213} \\
&(N \geq 330)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(\mathbf{2N} + \mathbf{220}) &= B_{\bar{N}}(2N + 220 - B_{\bar{N}}(2N + 219)) + B_{\bar{N}}(2N + 220 - B_{\bar{N}}(2N + 218)) + B_{\bar{N}}(2N + 220 - B_{\bar{N}}(2N + 217)) \\
&= B_{\bar{N}}(2N + 220 - (2N + 213)) + B_{\bar{N}}(2N + 220 - (N + 282)) + B_{\bar{N}}(2N + 220 - (2N - 111)) \\
&= B_{\bar{N}}(7) + B_{\bar{N}}(N - 62) + B_{\bar{N}}(331) = 7 + (N - 62) + 331 = \mathbf{N} + \mathbf{276} \\
&(N \geq 331)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(\mathbf{2N} + \mathbf{221}) &= B_{\bar{N}}(2N + 221 - B_{\bar{N}}(2N + 220)) + B_{\bar{N}}(2N + 221 - B_{\bar{N}}(2N + 219)) + B_{\bar{N}}(2N + 221 - B_{\bar{N}}(2N + 218)) \\
&= B_{\bar{N}}(2N + 221 - (N + 276)) + B_{\bar{N}}(2N + 221 - (2N + 213)) + B_{\bar{N}}(2N + 221 - (N + 282)) \\
&= B_{\bar{N}}(N - 55) + B_{\bar{N}}(8) + B_{\bar{N}}(N - 61) = (N - 55) + 8 + (N - 61) = \mathbf{2N} - \mathbf{108} \\
&(N \geq 294)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(\mathbf{2N} + \mathbf{222}) &= B_{\bar{N}}(2N + 222 - B_{\bar{N}}(2N + 221)) + B_{\bar{N}}(2N + 222 - B_{\bar{N}}(2N + 220)) + B_{\bar{N}}(2N + 222 - B_{\bar{N}}(2N + 219)) \\
&= B_{\bar{N}}(2N + 222 - (2N - 108)) + B_{\bar{N}}(2N + 222 - (N + 276)) + B_{\bar{N}}(2N + 222 - (2N + 213)) \\
&= B_{\bar{N}}(330) + B_{\bar{N}}(N - 54) + B_{\bar{N}}(9) = 330 + (N - 54) + 9 = \mathbf{N} + \mathbf{285} \\
&(N \geq 330)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(\mathbf{2N} + \mathbf{223}) &= B_{\bar{N}}(2N + 223 - B_{\bar{N}}(2N + 222)) + B_{\bar{N}}(2N + 223 - B_{\bar{N}}(2N + 221)) + B_{\bar{N}}(2N + 223 - B_{\bar{N}}(2N + 220)) \\
&= B_{\bar{N}}(2N + 223 - (N + 285)) + B_{\bar{N}}(2N + 223 - (2N - 108)) + B_{\bar{N}}(2N + 223 - (N + 276)) \\
&= B_{\bar{N}}(N - 62) + B_{\bar{N}}(331) + B_{\bar{N}}(N - 53) = (N - 62) + 331 + (N - 53) = \mathbf{2N} + \mathbf{216} \\
&(N \geq 331)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(\mathbf{2N} + \mathbf{224}) &= B_{\bar{N}}(2N + 224 - B_{\bar{N}}(2N + 223)) + B_{\bar{N}}(2N + 224 - B_{\bar{N}}(2N + 222)) + B_{\bar{N}}(2N + 224 - B_{\bar{N}}(2N + 221)) \\
&= B_{\bar{N}}(2N + 224 - (2N + 216)) + B_{\bar{N}}(2N + 224 - (N + 285)) + B_{\bar{N}}(2N + 224 - (2N - 108)) \\
&= B_{\bar{N}}(8) + B_{\bar{N}}(N - 61) + B_{\bar{N}}(332) = 8 + (N - 61) + 332 = \mathbf{N} + \mathbf{279} \\
&(N \geq 332)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(\mathbf{2N} + \mathbf{225}) &= B_{\bar{N}}(2N + 225 - B_{\bar{N}}(2N + 224)) + B_{\bar{N}}(2N + 225 - B_{\bar{N}}(2N + 223)) + B_{\bar{N}}(2N + 225 - B_{\bar{N}}(2N + 222)) \\
&= B_{\bar{N}}(2N + 225 - (N + 279)) + B_{\bar{N}}(2N + 225 - (2N + 216)) + B_{\bar{N}}(2N + 225 - (N + 285)) \\
&= B_{\bar{N}}(N - 54) + B_{\bar{N}}(9) + B_{\bar{N}}(N - 60) = (N - 54) + 9 + (N - 60) = \mathbf{2N} - \mathbf{105} \\
&(N \geq 295)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(\mathbf{2N} + \mathbf{226}) &= B_{\bar{N}}(2N + 226 - B_{\bar{N}}(2N + 225)) + B_{\bar{N}}(2N + 226 - B_{\bar{N}}(2N + 224)) + B_{\bar{N}}(2N + 226 - B_{\bar{N}}(2N + 223)) \\
&= B_{\bar{N}}(2N + 226 - (2N - 105)) + B_{\bar{N}}(2N + 226 - (N + 279)) + B_{\bar{N}}(2N + 226 - (2N + 216)) \\
&= B_{\bar{N}}(331) + B_{\bar{N}}(N - 53) + B_{\bar{N}}(10) = 331 + (N - 53) + 10 = \mathbf{N} + \mathbf{288} \\
&(N \geq 331)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(\mathbf{2N} + \mathbf{227}) &= B_{\bar{N}}(2N + 227 - B_{\bar{N}}(2N + 226)) + B_{\bar{N}}(2N + 227 - B_{\bar{N}}(2N + 225)) + B_{\bar{N}}(2N + 227 - B_{\bar{N}}(2N + 224)) \\
&= B_{\bar{N}}(2N + 227 - (N + 288)) + B_{\bar{N}}(2N + 227 - (2N - 105)) + B_{\bar{N}}(2N + 227 - (N + 279)) \\
&= B_{\bar{N}}(N - 61) + B_{\bar{N}}(332) + B_{\bar{N}}(N - 52) = (N - 61) + 332 + (N - 52) = \mathbf{2N} + \mathbf{219} \\
&(N \geq 332)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(\mathbf{2N} + \mathbf{228}) &= B_{\bar{N}}(2N + 228 - B_{\bar{N}}(2N + 227)) + B_{\bar{N}}(2N + 228 - B_{\bar{N}}(2N + 226)) + B_{\bar{N}}(2N + 228 - B_{\bar{N}}(2N + 225)) \\
&= B_{\bar{N}}(2N + 228 - (2N + 219)) + B_{\bar{N}}(2N + 228 - (N + 288)) + B_{\bar{N}}(2N + 228 - (2N - 105)) \\
&= B_{\bar{N}}(9) + B_{\bar{N}}(N - 60) + B_{\bar{N}}(333) = 9 + (N - 60) + 333 = \mathbf{N} + \mathbf{282} \\
&(N \geq 333)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(\mathbf{2N} + \mathbf{229}) &= B_{\bar{N}}(2N + 229 - B_{\bar{N}}(2N + 228)) + B_{\bar{N}}(2N + 229 - B_{\bar{N}}(2N + 227)) + B_{\bar{N}}(2N + 229 - B_{\bar{N}}(2N + 226)) \\
&= B_{\bar{N}}(2N + 229 - (N + 282)) + B_{\bar{N}}(2N + 229 - (2N + 219)) + B_{\bar{N}}(2N + 229 - (N + 288)) \\
&= B_{\bar{N}}(N - 53) + B_{\bar{N}}(10) + B_{\bar{N}}(N - 59) = (N - 53) + 10 + (N - 59) = \mathbf{2N} - \mathbf{102} \\
&(N \geq 296)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(\mathbf{2N} + \mathbf{230}) &= B_{\bar{N}}(2N + 230 - B_{\bar{N}}(2N + 229)) + B_{\bar{N}}(2N + 230 - B_{\bar{N}}(2N + 228)) + B_{\bar{N}}(2N + 230 - B_{\bar{N}}(2N + 227)) \\
&= B_{\bar{N}}(2N + 230 - (2N - 102)) + B_{\bar{N}}(2N + 230 - (N + 282)) + B_{\bar{N}}(2N + 230 - (2N + 219)) \\
&= B_{\bar{N}}(332) + B_{\bar{N}}(N - 52) + B_{\bar{N}}(11) = 332 + (N - 52) + 11 = \mathbf{N} + \mathbf{291} \\
&(N \geq 332)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(\mathbf{2N} + \mathbf{231}) &= B_{\bar{N}}(2N + 231 - B_{\bar{N}}(2N + 230)) + B_{\bar{N}}(2N + 231 - B_{\bar{N}}(2N + 229)) + B_{\bar{N}}(2N + 231 - B_{\bar{N}}(2N + 228)) \\
&= B_{\bar{N}}(2N + 231 - (N + 291)) + B_{\bar{N}}(2N + 231 - (2N - 102)) + B_{\bar{N}}(2N + 231 - (N + 282)) \\
&= B_{\bar{N}}(N - 60) + B_{\bar{N}}(333) + B_{\bar{N}}(N - 51) = (N - 60) + 333 + (N - 51) = \mathbf{2N} + \mathbf{222} \\
&(N \geq 333)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(\mathbf{2N} + \mathbf{232}) &= B_{\bar{N}}(2N + 232 - B_{\bar{N}}(2N + 231)) + B_{\bar{N}}(2N + 232 - B_{\bar{N}}(2N + 230)) + B_{\bar{N}}(2N + 232 - B_{\bar{N}}(2N + 229)) \\
&= B_{\bar{N}}(2N + 232 - (2N + 222)) + B_{\bar{N}}(2N + 232 - (N + 291)) + B_{\bar{N}}(2N + 232 - (2N - 102)) \\
&= B_{\bar{N}}(10) + B_{\bar{N}}(N - 59) + B_{\bar{N}}(334) = 10 + (N - 59) + 334 = \mathbf{N} + \mathbf{285} \\
&(N \geq 334)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(\mathbf{2N} + \mathbf{233}) &= B_{\bar{N}}(2N + 233 - B_{\bar{N}}(2N + 232)) + B_{\bar{N}}(2N + 233 - B_{\bar{N}}(2N + 231)) + B_{\bar{N}}(2N + 233 - B_{\bar{N}}(2N + 230)) \\
&= B_{\bar{N}}(2N + 233 - (N + 285)) + B_{\bar{N}}(2N + 233 - (2N + 222)) + B_{\bar{N}}(2N + 233 - (N + 291)) \\
&= B_{\bar{N}}(N - 52) + B_{\bar{N}}(11) + B_{\bar{N}}(N - 58) = (N - 52) + 11 + (N - 58) = \mathbf{2N} - \mathbf{99} \\
&(N \geq 297)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(\mathbf{2N} + \mathbf{234}) &= B_{\bar{N}}(2N + 234 - B_{\bar{N}}(2N + 233)) + B_{\bar{N}}(2N + 234 - B_{\bar{N}}(2N + 232)) + B_{\bar{N}}(2N + 234 - B_{\bar{N}}(2N + 231)) \\
&= B_{\bar{N}}(2N + 234 - (2N - 99)) + B_{\bar{N}}(2N + 234 - (N + 285)) + B_{\bar{N}}(2N + 234 - (2N + 222)) \\
&= B_{\bar{N}}(333) + B_{\bar{N}}(N - 51) + B_{\bar{N}}(12) = 333 + (N - 51) + 12 = \mathbf{N} + \mathbf{294} \\
&(N \geq 333)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(\mathbf{2N} + \mathbf{235}) &= B_{\bar{N}}(2N + 235 - B_{\bar{N}}(2N + 234)) + B_{\bar{N}}(2N + 235 - B_{\bar{N}}(2N + 233)) + B_{\bar{N}}(2N + 235 - B_{\bar{N}}(2N + 232)) \\
&= B_{\bar{N}}(2N + 235 - (N + 294)) + B_{\bar{N}}(2N + 235 - (2N - 99)) + B_{\bar{N}}(2N + 235 - (N + 285)) \\
&= B_{\bar{N}}(N - 59) + B_{\bar{N}}(334) + B_{\bar{N}}(N - 50) = (N - 59) + 334 + (N - 50) = \mathbf{2N} + \mathbf{225} \\
&(N \geq 334)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(\mathbf{2N} + \mathbf{236}) &= B_{\bar{N}}(2N + 236 - B_{\bar{N}}(2N + 235)) + B_{\bar{N}}(2N + 236 - B_{\bar{N}}(2N + 234)) + B_{\bar{N}}(2N + 236 - B_{\bar{N}}(2N + 233)) \\
&= B_{\bar{N}}(2N + 236 - (2N + 225)) + B_{\bar{N}}(2N + 236 - (N + 294)) + B_{\bar{N}}(2N + 236 - (2N - 99)) \\
&= B_{\bar{N}}(11) + B_{\bar{N}}(N - 58) + B_{\bar{N}}(335) = 11 + (N - 58) + 335 = \mathbf{N} + \mathbf{288} \\
&(N \geq 365)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(\mathbf{2N} + \mathbf{237}) &= B_{\bar{N}}(2N + 237 - B_{\bar{N}}(2N + 236)) + B_{\bar{N}}(2N + 237 - B_{\bar{N}}(2N + 235)) + B_{\bar{N}}(2N + 237 - B_{\bar{N}}(2N + 234)) \\
&= B_{\bar{N}}(2N + 237 - (N + 288)) + B_{\bar{N}}(2N + 237 - (2N + 225)) + B_{\bar{N}}(2N + 237 - (N + 294)) \\
&= B_{\bar{N}}(N - 51) + B_{\bar{N}}(12) + B_{\bar{N}}(N - 57) = (N - 51) + 12 + (N - 57) = \mathbf{2N} - \mathbf{96} \\
&(N \geq 366)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(\mathbf{2N} + \mathbf{238}) &= B_{\bar{N}}(2N + 238 - B_{\bar{N}}(2N + 237)) + B_{\bar{N}}(2N + 238 - B_{\bar{N}}(2N + 236)) + B_{\bar{N}}(2N + 238 - B_{\bar{N}}(2N + 235)) \\
&= B_{\bar{N}}(2N + 238 - (2N - 96)) + B_{\bar{N}}(2N + 238 - (N + 288)) + B_{\bar{N}}(2N + 238 - (2N + 225)) \\
&= B_{\bar{N}}(334) + B_{\bar{N}}(N - 50) + B_{\bar{N}}(13) = 334 + (N - 50) + 13 = \mathbf{N} + \mathbf{297} \\
&(N \geq 367)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(\mathbf{2N} + \mathbf{239}) &= B_{\bar{N}}(2N + 239 - B_{\bar{N}}(2N + 238)) + B_{\bar{N}}(2N + 239 - B_{\bar{N}}(2N + 237)) + B_{\bar{N}}(2N + 239 - B_{\bar{N}}(2N + 236)) \\
&= B_{\bar{N}}(2N + 239 - (N + 297)) + B_{\bar{N}}(2N + 239 - (2N - 96)) + B_{\bar{N}}(2N + 239 - (N + 288)) \\
&= B_{\bar{N}}(N - 58) + B_{\bar{N}}(335) + B_{\bar{N}}(N - 49) = (N - 58) + 335 + (N - 49) = \mathbf{2N} + \mathbf{228} \\
&(N \geq 335)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(\mathbf{2N} + \mathbf{240}) &= B_{\bar{N}}(2N + 240 - B_{\bar{N}}(2N + 239)) + B_{\bar{N}}(2N + 240 - B_{\bar{N}}(2N + 238)) + B_{\bar{N}}(2N + 240 - B_{\bar{N}}(2N + 237)) \\
&= B_{\bar{N}}(2N + 240 - (2N + 228)) + B_{\bar{N}}(2N + 240 - (N + 297)) + B_{\bar{N}}(2N + 240 - (2N - 96)) \\
&= B_{\bar{N}}(12) + B_{\bar{N}}(N - 57) + B_{\bar{N}}(336) = 12 + (N - 57) + 336 = \mathbf{N} + \mathbf{291} \\
&(N \geq 336)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(\mathbf{2N} + \mathbf{241}) &= B_{\bar{N}}(2N + 241 - B_{\bar{N}}(2N + 240)) + B_{\bar{N}}(2N + 241 - B_{\bar{N}}(2N + 239)) + B_{\bar{N}}(2N + 241 - B_{\bar{N}}(2N + 238)) \\
&= B_{\bar{N}}(2N + 241 - (N + 291)) + B_{\bar{N}}(2N + 241 - (2N + 228)) + B_{\bar{N}}(2N + 241 - (N + 297)) \\
&= B_{\bar{N}}(N - 50) + B_{\bar{N}}(13) + B_{\bar{N}}(N - 56) = (N - 50) + 13 + (N - 56) = \mathbf{2N} - \mathbf{93} \\
&(N \geq 299)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(\mathbf{2N} + \mathbf{242}) &= B_{\bar{N}}(2N + 242 - B_{\bar{N}}(2N + 241)) + B_{\bar{N}}(2N + 242 - B_{\bar{N}}(2N + 240)) + B_{\bar{N}}(2N + 242 - B_{\bar{N}}(2N + 239)) \\
&= B_{\bar{N}}(2N + 242 - (2N - 93)) + B_{\bar{N}}(2N + 242 - (N + 291)) + B_{\bar{N}}(2N + 242 - (2N + 228)) \\
&= B_{\bar{N}}(335) + B_{\bar{N}}(N - 49) + B_{\bar{N}}(14) = 335 + (N - 49) + 14 = \mathbf{N} + \mathbf{300} \\
&(N \geq 335)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + \mathbf{243}) &= B_{\bar{N}}(2N + 243 - B_{\bar{N}}(2N + 242)) + B_{\bar{N}}(2N + 243 - B_{\bar{N}}(2N + 241)) + B_{\bar{N}}(2N + 243 - B_{\bar{N}}(2N + 240)) \\
&= B_{\bar{N}}(2N + 243 - (N + 300)) + B_{\bar{N}}(2N + 243 - (2N - 93)) + B_{\bar{N}}(2N + 243 - (N + 291)) \\
&= B_{\bar{N}}(N - 57) + B_{\bar{N}}(336) + B_{\bar{N}}(N - 48) = (N - 57) + 336 + (N - 48) = \mathbf{2N} + \mathbf{231} \\
&(N \geq 336)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + \mathbf{244}) &= B_{\bar{N}}(2N + 244 - B_{\bar{N}}(2N + 243)) + B_{\bar{N}}(2N + 244 - B_{\bar{N}}(2N + 242)) + B_{\bar{N}}(2N + 244 - B_{\bar{N}}(2N + 241)) \\
&= B_{\bar{N}}(2N + 244 - (2N + 231)) + B_{\bar{N}}(2N + 244 - (N + 300)) + B_{\bar{N}}(2N + 244 - (2N - 93)) \\
&= B_{\bar{N}}(13) + B_{\bar{N}}(N - 56) + B_{\bar{N}}(337) = 13 + (N - 56) + 337 = \mathbf{N} + \mathbf{294} \\
&(N \geq 337)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + \mathbf{245}) &= B_{\bar{N}}(2N + 245 - B_{\bar{N}}(2N + 244)) + B_{\bar{N}}(2N + 245 - B_{\bar{N}}(2N + 243)) + B_{\bar{N}}(2N + 245 - B_{\bar{N}}(2N + 242)) \\
&= B_{\bar{N}}(2N + 245 - (N + 294)) + B_{\bar{N}}(2N + 245 - (2N + 231)) + B_{\bar{N}}(2N + 245 - (N + 300)) \\
&= B_{\bar{N}}(N - 49) + B_{\bar{N}}(14) + B_{\bar{N}}(N - 55) = (N - 49) + 14 + (N - 55) = \mathbf{2N} - \mathbf{90} \\
&(N \geq 300)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + \mathbf{246}) &= B_{\bar{N}}(2N + 246 - B_{\bar{N}}(2N + 245)) + B_{\bar{N}}(2N + 246 - B_{\bar{N}}(2N + 244)) + B_{\bar{N}}(2N + 246 - B_{\bar{N}}(2N + 243)) \\
&= B_{\bar{N}}(2N + 246 - (2N - 90)) + B_{\bar{N}}(2N + 246 - (N + 294)) + B_{\bar{N}}(2N + 246 - (2N + 231)) \\
&= B_{\bar{N}}(336) + B_{\bar{N}}(N - 48) + B_{\bar{N}}(15) = 336 + (N - 48) + 15 = \mathbf{N} + \mathbf{303} \\
&(N \geq 336)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + \mathbf{247}) &= B_{\bar{N}}(2N + 247 - B_{\bar{N}}(2N + 246)) + B_{\bar{N}}(2N + 247 - B_{\bar{N}}(2N + 245)) + B_{\bar{N}}(2N + 247 - B_{\bar{N}}(2N + 244)) \\
&= B_{\bar{N}}(2N + 247 - (N + 303)) + B_{\bar{N}}(2N + 247 - (2N - 90)) + B_{\bar{N}}(2N + 247 - (N + 294)) \\
&= B_{\bar{N}}(N - 56) + B_{\bar{N}}(337) + B_{\bar{N}}(N - 47) = (N - 56) + 337 + (N - 47) = \mathbf{2N} + \mathbf{234} \\
&(N \geq 337)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(\mathbf{2N} + \mathbf{248}) &= B_{\bar{N}}(2N + 248 - B_{\bar{N}}(2N + 247)) + B_{\bar{N}}(2N + 248 - B_{\bar{N}}(2N + 246)) + B_{\bar{N}}(2N + 248 - B_{\bar{N}}(2N + 245)) \\
&= B_{\bar{N}}(2N + 248 - (2N + 234)) + B_{\bar{N}}(2N + 248 - (N + 303)) + B_{\bar{N}}(2N + 248 - (2N - 90)) \\
&= B_{\bar{N}}(14) + B_{\bar{N}}(N - 55) + B_{\bar{N}}(338) = 14 + (N - 55) + 338 = \mathbf{N} + \mathbf{297} \\
&(N \geq 338)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(\mathbf{2N} + \mathbf{249}) &= B_{\bar{N}}(2N + 249 - B_{\bar{N}}(2N + 248)) + B_{\bar{N}}(2N + 249 - B_{\bar{N}}(2N + 247)) + B_{\bar{N}}(2N + 249 - B_{\bar{N}}(2N + 246)) \\
&= B_{\bar{N}}(2N + 249 - (N + 297)) + B_{\bar{N}}(2N + 249 - (2N + 234)) + B_{\bar{N}}(2N + 249 - (N + 303)) \\
&= B_{\bar{N}}(N - 48) + B_{\bar{N}}(15) + B_{\bar{N}}(N - 54) = (N - 48) + 15 + (N - 54) = \mathbf{2N} - \mathbf{87} \\
&(N \geq 301)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(\mathbf{2N} + \mathbf{250}) &= B_{\bar{N}}(2N + 250 - B_{\bar{N}}(2N + 249)) + B_{\bar{N}}(2N + 250 - B_{\bar{N}}(2N + 248)) + B_{\bar{N}}(2N + 250 - B_{\bar{N}}(2N + 247)) \\
&= B_{\bar{N}}(2N + 250 - (2N - 87)) + B_{\bar{N}}(2N + 250 - (N + 297)) + B_{\bar{N}}(2N + 250 - (2N + 234)) \\
&= B_{\bar{N}}(337) + B_{\bar{N}}(N - 47) + B_{\bar{N}}(16) = 337 + (N - 47) + 16 = \mathbf{N} + \mathbf{306} \\
&(N \geq 337)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(\mathbf{2N} + \mathbf{251}) &= B_{\bar{N}}(2N + 251 - B_{\bar{N}}(2N + 250)) + B_{\bar{N}}(2N + 251 - B_{\bar{N}}(2N + 249)) + B_{\bar{N}}(2N + 251 - B_{\bar{N}}(2N + 248)) \\
&= B_{\bar{N}}(2N + 251 - (N + 306)) + B_{\bar{N}}(2N + 251 - (2N - 87)) + B_{\bar{N}}(2N + 251 - (N + 297)) \\
&= B_{\bar{N}}(N - 55) + B_{\bar{N}}(338) + B_{\bar{N}}(N - 46) = (N - 55) + 338 + (N - 46) = \mathbf{2N} + \mathbf{237} \\
&(N \geq 338)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(\mathbf{2N} + \mathbf{252}) &= B_{\bar{N}}(2N + 252 - B_{\bar{N}}(2N + 251)) + B_{\bar{N}}(2N + 252 - B_{\bar{N}}(2N + 250)) + B_{\bar{N}}(2N + 252 - B_{\bar{N}}(2N + 249)) \\
&= B_{\bar{N}}(2N + 252 - (2N + 237)) + B_{\bar{N}}(2N + 252 - (N + 306)) + B_{\bar{N}}(2N + 252 - (2N - 87)) \\
&= B_{\bar{N}}(15) + B_{\bar{N}}(N - 54) + B_{\bar{N}}(339) = 15 + (N - 54) + 339 = \mathbf{N} + \mathbf{300} \\
&(N \geq 339)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 253) &= B_{\bar{N}}(2N + 253 - B_{\bar{N}}(2N + 252)) + B_{\bar{N}}(2N + 253 - B_{\bar{N}}(2N + 251)) + B_{\bar{N}}(2N + 253 - B_{\bar{N}}(2N + 250)) \\
&= B_{\bar{N}}(2N + 253 - (N + 300)) + B_{\bar{N}}(2N + 253 - (2N + 237)) + B_{\bar{N}}(2N + 253 - (N + 306)) \\
&= B_{\bar{N}}(N - 47) + B_{\bar{N}}(16) + B_{\bar{N}}(N - 53) = (N - 47) + 16 + (N - 53) = \mathbf{2N} - \mathbf{84} \\
&(N \geq 322)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 254) &= B_{\bar{N}}(2N + 254 - B_{\bar{N}}(2N + 253)) + B_{\bar{N}}(2N + 254 - B_{\bar{N}}(2N + 252)) + B_{\bar{N}}(2N + 254 - B_{\bar{N}}(2N + 251)) \\
&= B_{\bar{N}}(2N + 254 - (2N - 84)) + B_{\bar{N}}(2N + 254 - (N + 300)) + B_{\bar{N}}(2N + 254 - (2N + 237)) \\
&= B_{\bar{N}}(338) + B_{\bar{N}}(N - 46) + B_{\bar{N}}(17) = 338 + (N - 46) + 17 = \mathbf{N} + \mathbf{309} \\
&(\mathbf{N} \geq \mathbf{2087})
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 255) &= B_{\bar{N}}(2N + 255 - B_{\bar{N}}(2N + 254)) + B_{\bar{N}}(2N + 255 - B_{\bar{N}}(2N + 253)) + B_{\bar{N}}(2N + 255 - B_{\bar{N}}(2N + 252)) \\
&= B_{\bar{N}}(2N + 255 - (N + 309)) + B_{\bar{N}}(2N + 255 - (2N - 84)) + B_{\bar{N}}(2N + 255 - (N + 300)) \\
&= B_{\bar{N}}(N - 54) + B_{\bar{N}}(339) + B_{\bar{N}}(N - 45) = (N - 54) + 339 + (N - 45) = \mathbf{2N} + \mathbf{240} \\
&(N \geq 339)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 256) &= B_{\bar{N}}(2N + 256 - B_{\bar{N}}(2N + 255)) + B_{\bar{N}}(2N + 256 - B_{\bar{N}}(2N + 254)) + B_{\bar{N}}(2N + 256 - B_{\bar{N}}(2N + 253)) \\
&= B_{\bar{N}}(2N + 256 - (2N + 240)) + B_{\bar{N}}(2N + 256 - (N + 309)) + B_{\bar{N}}(2N + 256 - (2N - 84)) \\
&= B_{\bar{N}}(16) + B_{\bar{N}}(N - 53) + B_{\bar{N}}(340) = 16 + (N - 53) + 340 = \mathbf{N} + \mathbf{303} \\
&(N \geq 340)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 257) &= B_{\bar{N}}(2N + 257 - B_{\bar{N}}(2N + 256)) + B_{\bar{N}}(2N + 257 - B_{\bar{N}}(2N + 255)) + B_{\bar{N}}(2N + 257 - B_{\bar{N}}(2N + 254)) \\
&= B_{\bar{N}}(2N + 257 - (N + 303)) + B_{\bar{N}}(2N + 257 - (2N + 240)) + B_{\bar{N}}(2N + 257 - (N + 309)) \\
&= B_{\bar{N}}(N - 46) + B_{\bar{N}}(17) + B_{\bar{N}}(N - 52) = (N - 46) + 17 + (N - 52) = \mathbf{2N} - \mathbf{81} \\
&(N \geq 303)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(\mathbf{2N} + \mathbf{258}) &= B_{\bar{N}}(2N + 258 - B_{\bar{N}}(2N + 257)) + B_{\bar{N}}(2N + 258 - B_{\bar{N}}(2N + 256)) + B_{\bar{N}}(2N + 258 - B_{\bar{N}}(2N + 255)) \\
&= B_{\bar{N}}(2N + 258 - (2N - 81)) + B_{\bar{N}}(2N + 258 - (N + 303)) + B_{\bar{N}}(2N + 258 - (2N + 240)) \\
&= B_{\bar{N}}(339) + B_{\bar{N}}(N - 45) + B_{\bar{N}}(18) = 339 + (N - 45) + 18 = \mathbf{N} + \mathbf{312} \\
&(N \geq 339)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(\mathbf{2N} + \mathbf{259}) &= B_{\bar{N}}(2N + 259 - B_{\bar{N}}(2N + 258)) + B_{\bar{N}}(2N + 259 - B_{\bar{N}}(2N + 257)) + B_{\bar{N}}(2N + 259 - B_{\bar{N}}(2N + 256)) \\
&= B_{\bar{N}}(2N + 259 - (N + 312)) + B_{\bar{N}}(2N + 259 - (2N - 81)) + B_{\bar{N}}(2N + 259 - (N + 303)) \\
&= B_{\bar{N}}(N - 53) + B_{\bar{N}}(340) + B_{\bar{N}}(N - 44) = (N - 53) + 340 + (N - 44) = \mathbf{2N} + \mathbf{243} \\
&(N \geq 340)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(\mathbf{2N} + \mathbf{260}) &= B_{\bar{N}}(2N + 260 - B_{\bar{N}}(2N + 259)) + B_{\bar{N}}(2N + 260 - B_{\bar{N}}(2N + 258)) + B_{\bar{N}}(2N + 260 - B_{\bar{N}}(2N + 257)) \\
&= B_{\bar{N}}(2N + 260 - (2N + 243)) + B_{\bar{N}}(2N + 260 - (N + 312)) + B_{\bar{N}}(2N + 260 - (2N - 81)) \\
&= B_{\bar{N}}(17) + B_{\bar{N}}(N - 52) + B_{\bar{N}}(341) = 17 + (N - 52) + 341 = \mathbf{N} + \mathbf{306} \\
&(N \geq 341)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(\mathbf{2N} + \mathbf{261}) &= B_{\bar{N}}(2N + 261 - B_{\bar{N}}(2N + 260)) + B_{\bar{N}}(2N + 261 - B_{\bar{N}}(2N + 259)) + B_{\bar{N}}(2N + 261 - B_{\bar{N}}(2N + 258)) \\
&= B_{\bar{N}}(2N + 261 - (N + 306)) + B_{\bar{N}}(2N + 261 - (2N + 243)) + B_{\bar{N}}(2N + 261 - (N + 312)) \\
&= B_{\bar{N}}(N - 45) + B_{\bar{N}}(18) + B_{\bar{N}}(N - 51) = (N - 45) + 18 + (N - 51) = \mathbf{2N} - \mathbf{78} \\
&(N \geq 304)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(\mathbf{2N} + \mathbf{262}) &= B_{\bar{N}}(2N + 262 - B_{\bar{N}}(2N + 261)) + B_{\bar{N}}(2N + 262 - B_{\bar{N}}(2N + 260)) + B_{\bar{N}}(2N + 262 - B_{\bar{N}}(2N + 259)) \\
&= B_{\bar{N}}(2N + 262 - (2N - 78)) + B_{\bar{N}}(2N + 262 - (N + 306)) + B_{\bar{N}}(2N + 262 - (2N + 243)) \\
&= B_{\bar{N}}(340) + B_{\bar{N}}(N - 44) + B_{\bar{N}}(19) = 340 + (N - 44) + 19 = \mathbf{N} + \mathbf{315} \\
&(N \geq 340)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(\mathbf{2N} + \mathbf{263}) &= B_{\bar{N}}(2N + 263 - B_{\bar{N}}(2N + 262)) + B_{\bar{N}}(2N + 263 - B_{\bar{N}}(2N + 261)) + B_{\bar{N}}(2N + 263 - B_{\bar{N}}(2N + 260)) \\
&= B_{\bar{N}}(2N + 263 - (N + 315)) + B_{\bar{N}}(2N + 263 - (2N - 78)) + B_{\bar{N}}(2N + 263 - (N + 306)) \\
&= B_{\bar{N}}(N - 52) + B_{\bar{N}}(341) + B_{\bar{N}}(N - 43) = (N - 52) + 341 + (N - 43) = \mathbf{2N} + \mathbf{246} \\
&(N \geq 341)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(\mathbf{2N} + \mathbf{264}) &= B_{\bar{N}}(2N + 264 - B_{\bar{N}}(2N + 263)) + B_{\bar{N}}(2N + 264 - B_{\bar{N}}(2N + 262)) + B_{\bar{N}}(2N + 264 - B_{\bar{N}}(2N + 261)) \\
&= B_{\bar{N}}(2N + 264 - (2N + 246)) + B_{\bar{N}}(2N + 264 - (N + 315)) + B_{\bar{N}}(2N + 264 - (2N - 78)) \\
&= B_{\bar{N}}(18) + B_{\bar{N}}(N - 51) + B_{\bar{N}}(342) = 18 + (N - 51) + 342 = \mathbf{N} + \mathbf{309} \\
&(N \geq 342)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(\mathbf{2N} + \mathbf{265}) &= B_{\bar{N}}(2N + 265 - B_{\bar{N}}(2N + 264)) + B_{\bar{N}}(2N + 265 - B_{\bar{N}}(2N + 263)) + B_{\bar{N}}(2N + 265 - B_{\bar{N}}(2N + 262)) \\
&= B_{\bar{N}}(2N + 265 - (N + 309)) + B_{\bar{N}}(2N + 265 - (2N + 246)) + B_{\bar{N}}(2N + 265 - (N + 315)) \\
&= B_{\bar{N}}(N - 44) + B_{\bar{N}}(19) + B_{\bar{N}}(N - 50) = (N - 44) + 19 + (N - 50) = \mathbf{2N} - \mathbf{75} \\
&(N \geq 305)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(\mathbf{2N} + \mathbf{266}) &= B_{\bar{N}}(2N + 266 - B_{\bar{N}}(2N + 265)) + B_{\bar{N}}(2N + 266 - B_{\bar{N}}(2N + 264)) + B_{\bar{N}}(2N + 266 - B_{\bar{N}}(2N + 263)) \\
&= B_{\bar{N}}(2N + 266 - (2N - 75)) + B_{\bar{N}}(2N + 266 - (N + 309)) + B_{\bar{N}}(2N + 266 - (2N + 246)) \\
&= B_{\bar{N}}(341) + B_{\bar{N}}(N - 43) + B_{\bar{N}}(20) = 341 + (N - 43) + 20 = \mathbf{N} + \mathbf{318} \\
&(N \geq 341)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(\mathbf{2N} + \mathbf{267}) &= B_{\bar{N}}(2N + 267 - B_{\bar{N}}(2N + 266)) + B_{\bar{N}}(2N + 267 - B_{\bar{N}}(2N + 265)) + B_{\bar{N}}(2N + 267 - B_{\bar{N}}(2N + 264)) \\
&= B_{\bar{N}}(2N + 267 - (N + 318)) + B_{\bar{N}}(2N + 267 - (2N - 75)) + B_{\bar{N}}(2N + 267 - (N + 309)) \\
&= B_{\bar{N}}(N - 51) + B_{\bar{N}}(342) + B_{\bar{N}}(N - 42) = (N - 51) + 342 + (N - 42) = \mathbf{2N} + \mathbf{249} \\
&(N \geq 342)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 268) &= B_{\bar{N}}(2N + 268 - B_{\bar{N}}(2N + 267)) + B_{\bar{N}}(2N + 268 - B_{\bar{N}}(2N + 266)) + B_{\bar{N}}(2N + 268 - B_{\bar{N}}(2N + 265)) \\
&= B_{\bar{N}}(2N + 268 - (2N + 249)) + B_{\bar{N}}(2N + 268 - (N + 318)) + B_{\bar{N}}(2N + 268 - (2N - 75)) \\
&= B_{\bar{N}}(19) + B_{\bar{N}}(N - 50) + B_{\bar{N}}(343) = 19 + (N - 50) + 343 = \mathbf{N} + \mathbf{312} \\
&(N \geq 343)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 269) &= B_{\bar{N}}(2N + 269 - B_{\bar{N}}(2N + 268)) + B_{\bar{N}}(2N + 269 - B_{\bar{N}}(2N + 267)) + B_{\bar{N}}(2N + 269 - B_{\bar{N}}(2N + 266)) \\
&= B_{\bar{N}}(2N + 269 - (N + 312)) + B_{\bar{N}}(2N + 269 - (2N + 249)) + B_{\bar{N}}(2N + 269 - (N + 318)) \\
&= B_{\bar{N}}(N - 43) + B_{\bar{N}}(20) + B_{\bar{N}}(N - 49) = (N - 43) + 20 + (N - 49) = \mathbf{2N} - \mathbf{72} \\
&(N \geq 306)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 270) &= B_{\bar{N}}(2N + 270 - B_{\bar{N}}(2N + 269)) + B_{\bar{N}}(2N + 270 - B_{\bar{N}}(2N + 268)) + B_{\bar{N}}(2N + 270 - B_{\bar{N}}(2N + 267)) \\
&= B_{\bar{N}}(2N + 270 - (2N - 72)) + B_{\bar{N}}(2N + 270 - (N + 312)) + B_{\bar{N}}(2N + 270 - (2N + 249)) \\
&= B_{\bar{N}}(342) + B_{\bar{N}}(N - 42) + B_{\bar{N}}(21) = 342 + (N - 42) + 21 = \mathbf{N} + \mathbf{321} \\
&(N \geq 342)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 271) &= B_{\bar{N}}(2N + 271 - B_{\bar{N}}(2N + 270)) + B_{\bar{N}}(2N + 271 - B_{\bar{N}}(2N + 269)) + B_{\bar{N}}(2N + 271 - B_{\bar{N}}(2N + 268)) \\
&= B_{\bar{N}}(2N + 271 - (N + 321)) + B_{\bar{N}}(2N + 271 - (2N - 72)) + B_{\bar{N}}(2N + 271 - (N + 312)) \\
&= B_{\bar{N}}(N - 50) + B_{\bar{N}}(343) + B_{\bar{N}}(N - 41) = (N - 50) + 343 + (N - 41) = \mathbf{2N} + \mathbf{252} \\
&(N \geq 343)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 272) &= B_{\bar{N}}(2N + 272 - B_{\bar{N}}(2N + 271)) + B_{\bar{N}}(2N + 272 - B_{\bar{N}}(2N + 270)) + B_{\bar{N}}(2N + 272 - B_{\bar{N}}(2N + 269)) \\
&= B_{\bar{N}}(2N + 272 - (2N + 252)) + B_{\bar{N}}(2N + 272 - (N + 321)) + B_{\bar{N}}(2N + 272 - (2N - 72)) \\
&= B_{\bar{N}}(20) + B_{\bar{N}}(N - 49) + B_{\bar{N}}(344) = 20 + (N - 49) + 344 = \mathbf{N} + \mathbf{315} \\
&(N \geq 344)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 273) &= B_{\bar{N}}(2N + 273 - B_{\bar{N}}(2N + 272)) + B_{\bar{N}}(2N + 273 - B_{\bar{N}}(2N + 271)) + B_{\bar{N}}(2N + 273 - B_{\bar{N}}(2N + 270)) \\
&= B_{\bar{N}}(2N + 273 - (N + 315)) + B_{\bar{N}}(2N + 273 - (2N + 252)) + B_{\bar{N}}(2N + 273 - (N + 321)) \\
&= B_{\bar{N}}(N - 42) + B_{\bar{N}}(21) + B_{\bar{N}}(N - 48) = (N - 42) + 21 + (N - 48) = \mathbf{2N} - \mathbf{69} \\
&(N \geq 307)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 274) &= B_{\bar{N}}(2N + 274 - B_{\bar{N}}(2N + 273)) + B_{\bar{N}}(2N + 274 - B_{\bar{N}}(2N + 272)) + B_{\bar{N}}(2N + 274 - B_{\bar{N}}(2N + 271)) \\
&= B_{\bar{N}}(2N + 274 - (2N - 69)) + B_{\bar{N}}(2N + 274 - (N + 315)) + B_{\bar{N}}(2N + 274 - (2N + 252)) \\
&= B_{\bar{N}}(343) + B_{\bar{N}}(N - 41) + B_{\bar{N}}(22) = 343 + (N - 41) + 22 = \mathbf{N} + \mathbf{324} \\
&(N \geq 343)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 275) &= B_{\bar{N}}(2N + 275 - B_{\bar{N}}(2N + 274)) + B_{\bar{N}}(2N + 275 - B_{\bar{N}}(2N + 273)) + B_{\bar{N}}(2N + 275 - B_{\bar{N}}(2N + 272)) \\
&= B_{\bar{N}}(2N + 275 - (N + 324)) + B_{\bar{N}}(2N + 275 - (2N - 69)) + B_{\bar{N}}(2N + 275 - (N + 315)) \\
&= B_{\bar{N}}(N - 49) + B_{\bar{N}}(344) + B_{\bar{N}}(N - 40) = (N - 49) + 344 + (N - 40) = \mathbf{2N} + \mathbf{255} \\
&(N \geq 344)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 276) &= B_{\bar{N}}(2N + 276 - B_{\bar{N}}(2N + 275)) + B_{\bar{N}}(2N + 276 - B_{\bar{N}}(2N + 274)) + B_{\bar{N}}(2N + 276 - B_{\bar{N}}(2N + 273)) \\
&= B_{\bar{N}}(2N + 276 - (2N + 255)) + B_{\bar{N}}(2N + 276 - (N + 324)) + B_{\bar{N}}(2N + 276 - (2N - 69)) \\
&= B_{\bar{N}}(21) + B_{\bar{N}}(N - 48) + B_{\bar{N}}(345) = 21 + (N - 48) + 345 = \mathbf{N} + \mathbf{318} \\
&(N \geq 345)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 277) &= B_{\bar{N}}(2N + 277 - B_{\bar{N}}(2N + 276)) + B_{\bar{N}}(2N + 277 - B_{\bar{N}}(2N + 275)) + B_{\bar{N}}(2N + 277 - B_{\bar{N}}(2N + 274)) \\
&= B_{\bar{N}}(2N + 277 - (N + 318)) + B_{\bar{N}}(2N + 277 - (2N + 255)) + B_{\bar{N}}(2N + 277 - (N + 324)) \\
&= B_{\bar{N}}(N - 41) + B_{\bar{N}}(22) + B_{\bar{N}}(N - 47) = (N - 41) + 22 + (N - 47) = \mathbf{2N} - \mathbf{66} \\
&(N \geq 308)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 278) &= B_{\bar{N}}(2N + 278 - B_{\bar{N}}(2N + 277)) + B_{\bar{N}}(2N + 278 - B_{\bar{N}}(2N + 276)) + B_{\bar{N}}(2N + 278 - B_{\bar{N}}(2N + 275)) \\
&= B_{\bar{N}}(2N + 278 - (2N - 66)) + B_{\bar{N}}(2N + 278 - (N + 318)) + B_{\bar{N}}(2N + 278 - (2N + 255)) \\
&= B_{\bar{N}}(344) + B_{\bar{N}}(N - 40) + B_{\bar{N}}(23) = 344 + (N - 40) + 23 = \mathbf{N} + \mathbf{327} \\
&(N \geq 344)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 279) &= B_{\bar{N}}(2N + 279 - B_{\bar{N}}(2N + 278)) + B_{\bar{N}}(2N + 279 - B_{\bar{N}}(2N + 277)) + B_{\bar{N}}(2N + 279 - B_{\bar{N}}(2N + 276)) \\
&= B_{\bar{N}}(2N + 279 - (N + 327)) + B_{\bar{N}}(2N + 279 - (2N - 66)) + B_{\bar{N}}(2N + 279 - (N + 318)) \\
&= B_{\bar{N}}(N - 48) + B_{\bar{N}}(345) + B_{\bar{N}}(N - 39) = (N - 48) + 345 + (N - 39) = \mathbf{2N} + \mathbf{258} \\
&(N \geq 345)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 280) &= B_{\bar{N}}(2N + 280 - B_{\bar{N}}(2N + 279)) + B_{\bar{N}}(2N + 280 - B_{\bar{N}}(2N + 278)) + B_{\bar{N}}(2N + 280 - B_{\bar{N}}(2N + 277)) \\
&= B_{\bar{N}}(2N + 280 - (2N + 258)) + B_{\bar{N}}(2N + 280 - (N + 327)) + B_{\bar{N}}(2N + 280 - (2N - 66)) \\
&= B_{\bar{N}}(22) + B_{\bar{N}}(N - 47) + B_{\bar{N}}(346) = 22 + (N - 47) + 346 = \mathbf{N} + \mathbf{321} \\
&(N \geq 346)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 281) &= B_{\bar{N}}(2N + 281 - B_{\bar{N}}(2N + 280)) + B_{\bar{N}}(2N + 281 - B_{\bar{N}}(2N + 279)) + B_{\bar{N}}(2N + 281 - B_{\bar{N}}(2N + 278)) \\
&= B_{\bar{N}}(2N + 281 - (N + 321)) + B_{\bar{N}}(2N + 281 - (2N + 258)) + B_{\bar{N}}(2N + 281 - (N + 327)) \\
&= B_{\bar{N}}(N - 40) + B_{\bar{N}}(23) + B_{\bar{N}}(N - 46) = (N - 40) + 23 + (N - 46) = \mathbf{2N} - \mathbf{63} \\
&(N \geq 309)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 282) &= B_{\bar{N}}(2N + 282 - B_{\bar{N}}(2N + 281)) + B_{\bar{N}}(2N + 282 - B_{\bar{N}}(2N + 280)) + B_{\bar{N}}(2N + 282 - B_{\bar{N}}(2N + 279)) \\
&= B_{\bar{N}}(2N + 282 - (2N - 63)) + B_{\bar{N}}(2N + 282 - (N + 321)) + B_{\bar{N}}(2N + 282 - (2N + 258)) \\
&= B_{\bar{N}}(345) + B_{\bar{N}}(N - 39) + B_{\bar{N}}(24) = 345 + (N - 39) + 24 = \mathbf{N} + \mathbf{330} \\
&(N \geq 345)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(\mathbf{2N} + \mathbf{283}) &= B_{\bar{N}}(2N + 283 - B_{\bar{N}}(2N + 282)) + B_{\bar{N}}(2N + 283 - B_{\bar{N}}(2N + 281)) + B_{\bar{N}}(2N + 283 - B_{\bar{N}}(2N + 280)) \\
&= B_{\bar{N}}(2N + 283 - (N + 330)) + B_{\bar{N}}(2N + 283 - (2N - 63)) + B_{\bar{N}}(2N + 283 - (N + 321)) \\
&= B_{\bar{N}}(N - 47) + B_{\bar{N}}(346) + B_{\bar{N}}(N - 38) = (N - 47) + 346 + (N - 38) = \mathbf{2N} + \mathbf{261} \\
&(N \geq 346)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(\mathbf{2N} + \mathbf{284}) &= B_{\bar{N}}(2N + 284 - B_{\bar{N}}(2N + 283)) + B_{\bar{N}}(2N + 284 - B_{\bar{N}}(2N + 282)) + B_{\bar{N}}(2N + 284 - B_{\bar{N}}(2N + 281)) \\
&= B_{\bar{N}}(2N + 284 - (2N + 261)) + B_{\bar{N}}(2N + 284 - (N + 330)) + B_{\bar{N}}(2N + 284 - (2N - 63)) \\
&= B_{\bar{N}}(23) + B_{\bar{N}}(N - 46) + B_{\bar{N}}(347) = 23 + (N - 46) + 347 = \mathbf{N} + \mathbf{324} \\
&(N \geq 347)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(\mathbf{2N} + \mathbf{285}) &= B_{\bar{N}}(2N + 285 - B_{\bar{N}}(2N + 284)) + B_{\bar{N}}(2N + 285 - B_{\bar{N}}(2N + 283)) + B_{\bar{N}}(2N + 285 - B_{\bar{N}}(2N + 282)) \\
&= B_{\bar{N}}(2N + 285 - (N + 324)) + B_{\bar{N}}(2N + 285 - (2N + 261)) + B_{\bar{N}}(2N + 285 - (N + 330)) \\
&= B_{\bar{N}}(N - 39) + B_{\bar{N}}(24) + B_{\bar{N}}(N - 45) = (N - 39) + 24 + (N - 45) = \mathbf{2N} - \mathbf{60} \\
&(N \geq 310)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(\mathbf{2N} + \mathbf{286}) &= B_{\bar{N}}(2N + 286 - B_{\bar{N}}(2N + 285)) + B_{\bar{N}}(2N + 286 - B_{\bar{N}}(2N + 284)) + B_{\bar{N}}(2N + 286 - B_{\bar{N}}(2N + 283)) \\
&= B_{\bar{N}}(2N + 286 - (2N - 60)) + B_{\bar{N}}(2N + 286 - (N + 324)) + B_{\bar{N}}(2N + 286 - (2N + 261)) \\
&= B_{\bar{N}}(346) + B_{\bar{N}}(N - 38) + B_{\bar{N}}(25) = 346 + (N - 38) + 25 = \mathbf{N} + \mathbf{333} \\
&(N \geq 346)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(\mathbf{2N} + \mathbf{287}) &= B_{\bar{N}}(2N + 287 - B_{\bar{N}}(2N + 286)) + B_{\bar{N}}(2N + 287 - B_{\bar{N}}(2N + 285)) + B_{\bar{N}}(2N + 287 - B_{\bar{N}}(2N + 284)) \\
&= B_{\bar{N}}(2N + 287 - (N + 333)) + B_{\bar{N}}(2N + 287 - (2N - 60)) + B_{\bar{N}}(2N + 287 - (N + 324)) \\
&= B_{\bar{N}}(N - 46) + B_{\bar{N}}(347) + B_{\bar{N}}(N - 37) = (N - 46) + 347 + (N - 37) = \mathbf{2N} + \mathbf{264} \\
&(N \geq 347)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(\mathbf{2N} + \mathbf{288}) &= B_{\bar{N}}(2N + 288 - B_{\bar{N}}(2N + 287)) + B_{\bar{N}}(2N + 288 - B_{\bar{N}}(2N + 286)) + B_{\bar{N}}(2N + 288 - B_{\bar{N}}(2N + 285)) \\
&= B_{\bar{N}}(2N + 288 - (2N + 264)) + B_{\bar{N}}(2N + 288 - (N + 333)) + B_{\bar{N}}(2N + 288 - (2N - 60)) \\
&= B_{\bar{N}}(24) + B_{\bar{N}}(N - 45) + B_{\bar{N}}(348) = 24 + (N - 45) + 348 = \mathbf{N} + \mathbf{327} \\
&(N \geq 348)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(\mathbf{2N} + \mathbf{289}) &= B_{\bar{N}}(2N + 289 - B_{\bar{N}}(2N + 288)) + B_{\bar{N}}(2N + 289 - B_{\bar{N}}(2N + 287)) + B_{\bar{N}}(2N + 289 - B_{\bar{N}}(2N + 286)) \\
&= B_{\bar{N}}(2N + 289 - (N + 327)) + B_{\bar{N}}(2N + 289 - (2N + 264)) + B_{\bar{N}}(2N + 289 - (N + 333)) \\
&= B_{\bar{N}}(N - 38) + B_{\bar{N}}(25) + B_{\bar{N}}(N - 44) = (N - 38) + 25 + (N - 44) = \mathbf{2N} - \mathbf{57} \\
&(N \geq 311)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(\mathbf{2N} + \mathbf{290}) &= B_{\bar{N}}(2N + 290 - B_{\bar{N}}(2N + 289)) + B_{\bar{N}}(2N + 290 - B_{\bar{N}}(2N + 288)) + B_{\bar{N}}(2N + 290 - B_{\bar{N}}(2N + 287)) \\
&= B_{\bar{N}}(2N + 290 - (2N - 57)) + B_{\bar{N}}(2N + 290 - (N + 327)) + B_{\bar{N}}(2N + 290 - (2N + 264)) \\
&= B_{\bar{N}}(347) + B_{\bar{N}}(N - 37) + B_{\bar{N}}(26) = 347 + (N - 37) + 26 = \mathbf{N} + \mathbf{336} \\
&(N \geq 347)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(\mathbf{2N} + \mathbf{291}) &= B_{\bar{N}}(2N + 291 - B_{\bar{N}}(2N + 290)) + B_{\bar{N}}(2N + 291 - B_{\bar{N}}(2N + 289)) + B_{\bar{N}}(2N + 291 - B_{\bar{N}}(2N + 288)) \\
&= B_{\bar{N}}(2N + 291 - (N + 336)) + B_{\bar{N}}(2N + 291 - (2N - 57)) + B_{\bar{N}}(2N + 291 - (N + 327)) \\
&= B_{\bar{N}}(N - 45) + B_{\bar{N}}(348) + B_{\bar{N}}(N - 36) = (N - 45) + 348 + (N - 36) = \mathbf{2N} + \mathbf{267} \\
&(N \geq 348)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(\mathbf{2N} + \mathbf{292}) &= B_{\bar{N}}(2N + 292 - B_{\bar{N}}(2N + 291)) + B_{\bar{N}}(2N + 292 - B_{\bar{N}}(2N + 290)) + B_{\bar{N}}(2N + 292 - B_{\bar{N}}(2N + 289)) \\
&= B_{\bar{N}}(2N + 292 - (2N + 267)) + B_{\bar{N}}(2N + 292 - (N + 336)) + B_{\bar{N}}(2N + 292 - (2N - 57)) \\
&= B_{\bar{N}}(25) + B_{\bar{N}}(N - 44) + B_{\bar{N}}(349) = 25 + (N - 44) + 349 = \mathbf{N} + \mathbf{330} \\
&(N \geq 349)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(\mathbf{2N} + \mathbf{293}) &= B_{\bar{N}}(2N + 293 - B_{\bar{N}}(2N + 292)) + B_{\bar{N}}(2N + 293 - B_{\bar{N}}(2N + 291)) + B_{\bar{N}}(2N + 293 - B_{\bar{N}}(2N + 290)) \\
&= B_{\bar{N}}(2N + 293 - (N + 330)) + B_{\bar{N}}(2N + 293 - (2N + 267)) + B_{\bar{N}}(2N + 293 - (N + 336)) \\
&= B_{\bar{N}}(N - 37) + B_{\bar{N}}(26) + B_{\bar{N}}(N - 43) = (N - 37) + 26 + (N - 43) = \mathbf{2N} - \mathbf{54} \\
&(N \geq 312)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(\mathbf{2N} + \mathbf{294}) &= B_{\bar{N}}(2N + 294 - B_{\bar{N}}(2N + 293)) + B_{\bar{N}}(2N + 294 - B_{\bar{N}}(2N + 292)) + B_{\bar{N}}(2N + 294 - B_{\bar{N}}(2N + 291)) \\
&= B_{\bar{N}}(2N + 294 - (2N - 54)) + B_{\bar{N}}(2N + 294 - (N + 330)) + B_{\bar{N}}(2N + 294 - (2N + 267)) \\
&= B_{\bar{N}}(348) + B_{\bar{N}}(N - 36) + B_{\bar{N}}(27) = 348 + (N - 36) + 27 = \mathbf{N} + \mathbf{339} \\
&(N \geq 348)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(\mathbf{2N} + \mathbf{295}) &= B_{\bar{N}}(2N + 295 - B_{\bar{N}}(2N + 294)) + B_{\bar{N}}(2N + 295 - B_{\bar{N}}(2N + 293)) + B_{\bar{N}}(2N + 295 - B_{\bar{N}}(2N + 292)) \\
&= B_{\bar{N}}(2N + 295 - (N + 339)) + B_{\bar{N}}(2N + 295 - (2N - 54)) + B_{\bar{N}}(2N + 295 - (N + 330)) \\
&= B_{\bar{N}}(N - 44) + B_{\bar{N}}(349) + B_{\bar{N}}(N - 35) = (N - 44) + 349 + (N - 35) = \mathbf{2N} + \mathbf{270} \\
&(N \geq 349)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(\mathbf{2N} + \mathbf{296}) &= B_{\bar{N}}(2N + 296 - B_{\bar{N}}(2N + 295)) + B_{\bar{N}}(2N + 296 - B_{\bar{N}}(2N + 294)) + B_{\bar{N}}(2N + 296 - B_{\bar{N}}(2N + 293)) \\
&= B_{\bar{N}}(2N + 296 - (2N + 270)) + B_{\bar{N}}(2N + 296 - (N + 339)) + B_{\bar{N}}(2N + 296 - (2N - 54)) \\
&= B_{\bar{N}}(26) + B_{\bar{N}}(N - 43) + B_{\bar{N}}(350) = 26 + (N - 43) + 350 = \mathbf{N} + \mathbf{333} \\
&(N \geq 350)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(\mathbf{2N} + \mathbf{297}) &= B_{\bar{N}}(2N + 297 - B_{\bar{N}}(2N + 296)) + B_{\bar{N}}(2N + 297 - B_{\bar{N}}(2N + 295)) + B_{\bar{N}}(2N + 297 - B_{\bar{N}}(2N + 294)) \\
&= B_{\bar{N}}(2N + 297 - (N + 333)) + B_{\bar{N}}(2N + 297 - (2N + 270)) + B_{\bar{N}}(2N + 297 - (N + 339)) \\
&= B_{\bar{N}}(N - 36) + B_{\bar{N}}(27) + B_{\bar{N}}(N - 42) = (N - 36) + 27 + (N - 42) = \mathbf{2N} - \mathbf{51} \\
&(N \geq 313)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 298) &= B_{\bar{N}}(2N + 298 - B_{\bar{N}}(2N + 297)) + B_{\bar{N}}(2N + 298 - B_{\bar{N}}(2N + 296)) + B_{\bar{N}}(2N + 298 - B_{\bar{N}}(2N + 295)) \\
&= B_{\bar{N}}(2N + 298 - (2N - 51)) + B_{\bar{N}}(2N + 298 - (N + 333)) + B_{\bar{N}}(2N + 298 - (2N + 270)) \\
&= B_{\bar{N}}(349) + B_{\bar{N}}(N - 35) + B_{\bar{N}}(28) = 349 + (N - 35) + 28 = \mathbf{N} + \mathbf{342} \\
&(N \geq 349)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 299) &= B_{\bar{N}}(2N + 299 - B_{\bar{N}}(2N + 298)) + B_{\bar{N}}(2N + 299 - B_{\bar{N}}(2N + 297)) + B_{\bar{N}}(2N + 299 - B_{\bar{N}}(2N + 296)) \\
&= B_{\bar{N}}(2N + 299 - (N + 342)) + B_{\bar{N}}(2N + 299 - (2N - 51)) + B_{\bar{N}}(2N + 299 - (N + 333)) \\
&= B_{\bar{N}}(N - 43) + B_{\bar{N}}(350) + B_{\bar{N}}(N - 34) = (N - 43) + 350 + (N - 34) = \mathbf{2N} + \mathbf{273} \\
&(N \geq 350)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 300) &= B_{\bar{N}}(2N + 300 - B_{\bar{N}}(2N + 299)) + B_{\bar{N}}(2N + 300 - B_{\bar{N}}(2N + 298)) + B_{\bar{N}}(2N + 300 - B_{\bar{N}}(2N + 297)) \\
&= B_{\bar{N}}(2N + 300 - (2N + 273)) + B_{\bar{N}}(2N + 300 - (N + 342)) + B_{\bar{N}}(2N + 300 - (2N - 51)) \\
&= B_{\bar{N}}(27) + B_{\bar{N}}(N - 42) + B_{\bar{N}}(351) = 27 + (N - 42) + 351 = \mathbf{N} + \mathbf{336} \\
&(N \geq 351)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 301) &= B_{\bar{N}}(2N + 301 - B_{\bar{N}}(2N + 300)) + B_{\bar{N}}(2N + 301 - B_{\bar{N}}(2N + 299)) + B_{\bar{N}}(2N + 301 - B_{\bar{N}}(2N + 298)) \\
&= B_{\bar{N}}(2N + 301 - (N + 336)) + B_{\bar{N}}(2N + 301 - (2N + 273)) + B_{\bar{N}}(2N + 301 - (N + 342)) \\
&= B_{\bar{N}}(N - 35) + B_{\bar{N}}(28) + B_{\bar{N}}(N - 41) = (N - 35) + 28 + (N - 41) = \mathbf{2N} - \mathbf{48} \\
&(N \geq 314)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 302) &= B_{\bar{N}}(2N + 302 - B_{\bar{N}}(2N + 301)) + B_{\bar{N}}(2N + 302 - B_{\bar{N}}(2N + 300)) + B_{\bar{N}}(2N + 302 - B_{\bar{N}}(2N + 299)) \\
&= B_{\bar{N}}(2N + 302 - (2N - 48)) + B_{\bar{N}}(2N + 302 - (N + 336)) + B_{\bar{N}}(2N + 302 - (2N + 273)) \\
&= B_{\bar{N}}(350) + B_{\bar{N}}(N - 34) + B_{\bar{N}}(29) = 350 + (N - 34) + 29 = \mathbf{N} + \mathbf{345} \\
&(N \geq 350)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 303) &= B_{\bar{N}}(2N + 303 - B_{\bar{N}}(2N + 302)) + B_{\bar{N}}(2N + 303 - B_{\bar{N}}(2N + 301)) + B_{\bar{N}}(2N + 303 - B_{\bar{N}}(2N + 300)) \\
&= B_{\bar{N}}(2N + 303 - (N + 345)) + B_{\bar{N}}(2N + 303 - (2N - 48)) + B_{\bar{N}}(2N + 303 - (N + 336)) \\
&= B_{\bar{N}}(N - 42) + B_{\bar{N}}(351) + B_{\bar{N}}(N - 33) = (N - 42) + 351 + (N - 33) = \mathbf{2N} + \mathbf{276} \\
&(N \geq 351)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 304) &= B_{\bar{N}}(2N + 304 - B_{\bar{N}}(2N + 303)) + B_{\bar{N}}(2N + 304 - B_{\bar{N}}(2N + 302)) + B_{\bar{N}}(2N + 304 - B_{\bar{N}}(2N + 301)) \\
&= B_{\bar{N}}(2N + 304 - (2N + 276)) + B_{\bar{N}}(2N + 304 - (N + 345)) + B_{\bar{N}}(2N + 304 - (2N - 48)) \\
&= B_{\bar{N}}(28) + B_{\bar{N}}(N - 41) + B_{\bar{N}}(352) = 28 + (N - 41) + 352 = \mathbf{N} + \mathbf{339} \\
&(N \geq 352)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 305) &= B_{\bar{N}}(2N + 305 - B_{\bar{N}}(2N + 304)) + B_{\bar{N}}(2N + 305 - B_{\bar{N}}(2N + 303)) + B_{\bar{N}}(2N + 305 - B_{\bar{N}}(2N + 302)) \\
&= B_{\bar{N}}(2N + 305 - (N + 339)) + B_{\bar{N}}(2N + 305 - (2N + 276)) + B_{\bar{N}}(2N + 305 - (N + 345)) \\
&= B_{\bar{N}}(N - 34) + B_{\bar{N}}(29) + B_{\bar{N}}(N - 40) = (N - 34) + 29 + (N - 40) = \mathbf{2N} - \mathbf{45} \\
&(N \geq 315)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 306) &= B_{\bar{N}}(2N + 306 - B_{\bar{N}}(2N + 305)) + B_{\bar{N}}(2N + 306 - B_{\bar{N}}(2N + 304)) + B_{\bar{N}}(2N + 306 - B_{\bar{N}}(2N + 303)) \\
&= B_{\bar{N}}(2N + 306 - (2N - 45)) + B_{\bar{N}}(2N + 306 - (N + 339)) + B_{\bar{N}}(2N + 306 - (2N + 276)) \\
&= B_{\bar{N}}(351) + B_{\bar{N}}(N - 33) + B_{\bar{N}}(30) = 351 + (N - 33) + 30 = \mathbf{N} + \mathbf{348} \\
&(N \geq 351)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 307) &= B_{\bar{N}}(2N + 307 - B_{\bar{N}}(2N + 306)) + B_{\bar{N}}(2N + 307 - B_{\bar{N}}(2N + 305)) + B_{\bar{N}}(2N + 307 - B_{\bar{N}}(2N + 304)) \\
&= B_{\bar{N}}(2N + 307 - (N + 348)) + B_{\bar{N}}(2N + 307 - (2N - 45)) + B_{\bar{N}}(2N + 307 - (N + 339)) \\
&= B_{\bar{N}}(N - 41) + B_{\bar{N}}(352) + B_{\bar{N}}(N - 32) = (N - 41) + 352 + (N - 32) = \mathbf{2N} + \mathbf{279} \\
&(N \geq 352)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 308) &= B_{\bar{N}}(2N + 308 - B_{\bar{N}}(2N + 307)) + B_{\bar{N}}(2N + 308 - B_{\bar{N}}(2N + 306)) + B_{\bar{N}}(2N + 308 - B_{\bar{N}}(2N + 305)) \\
&= B_{\bar{N}}(2N + 308 - (2N + 279)) + B_{\bar{N}}(2N + 308 - (N + 348)) + B_{\bar{N}}(2N + 308 - (2N - 45)) \\
&= B_{\bar{N}}(29) + B_{\bar{N}}(N - 40) + B_{\bar{N}}(353) = 29 + (N - 40) + 353 = \mathbf{N} + \mathbf{342} \\
&(N \geq 353)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 309) &= B_{\bar{N}}(2N + 309 - B_{\bar{N}}(2N + 308)) + B_{\bar{N}}(2N + 309 - B_{\bar{N}}(2N + 307)) + B_{\bar{N}}(2N + 309 - B_{\bar{N}}(2N + 306)) \\
&= B_{\bar{N}}(2N + 309 - (N + 342)) + B_{\bar{N}}(2N + 309 - (2N + 279)) + B_{\bar{N}}(2N + 309 - (N + 348)) \\
&= B_{\bar{N}}(N - 33) + B_{\bar{N}}(30) + B_{\bar{N}}(N - 39) = (N - 33) + 30 + (N - 39) = \mathbf{2N} - \mathbf{42} \\
&(N \geq 316)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 310) &= B_{\bar{N}}(2N + 310 - B_{\bar{N}}(2N + 309)) + B_{\bar{N}}(2N + 310 - B_{\bar{N}}(2N + 308)) + B_{\bar{N}}(2N + 310 - B_{\bar{N}}(2N + 307)) \\
&= B_{\bar{N}}(2N + 310 - (2N - 42)) + B_{\bar{N}}(2N + 310 - (N + 342)) + B_{\bar{N}}(2N + 310 - (2N + 279)) \\
&= B_{\bar{N}}(352) + B_{\bar{N}}(N - 32) + B_{\bar{N}}(31) = 352 + (N - 32) + 31 = \mathbf{N} + \mathbf{351} \\
&(N \geq 352)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 311) &= B_{\bar{N}}(2N + 311 - B_{\bar{N}}(2N + 310)) + B_{\bar{N}}(2N + 311 - B_{\bar{N}}(2N + 309)) + B_{\bar{N}}(2N + 311 - B_{\bar{N}}(2N + 308)) \\
&= B_{\bar{N}}(2N + 311 - (N + 351)) + B_{\bar{N}}(2N + 311 - (2N - 42)) + B_{\bar{N}}(2N + 311 - (N + 342)) \\
&= B_{\bar{N}}(N - 40) + B_{\bar{N}}(353) + B_{\bar{N}}(N - 31) = (N - 40) + 353 + (N - 31) = \mathbf{2N} + \mathbf{282} \\
&(N \geq 353)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 312) &= B_{\bar{N}}(2N + 312 - B_{\bar{N}}(2N + 311)) + B_{\bar{N}}(2N + 312 - B_{\bar{N}}(2N + 310)) + B_{\bar{N}}(2N + 312 - B_{\bar{N}}(2N + 309)) \\
&= B_{\bar{N}}(2N + 312 - (2N + 282)) + B_{\bar{N}}(2N + 312 - (N + 351)) + B_{\bar{N}}(2N + 312 - (2N - 42)) \\
&= B_{\bar{N}}(30) + B_{\bar{N}}(N - 39) + B_{\bar{N}}(354) = 30 + (N - 39) + 354 = \mathbf{N} + \mathbf{345} \\
&(N \geq 354)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 313) &= B_{\bar{N}}(2N + 313 - B_{\bar{N}}(2N + 312)) + B_{\bar{N}}(2N + 313 - B_{\bar{N}}(2N + 311)) + B_{\bar{N}}(2N + 313 - B_{\bar{N}}(2N + 310)) \\
&= B_{\bar{N}}(2N + 313 - (N + 345)) + B_{\bar{N}}(2N + 313 - (2N + 282)) + B_{\bar{N}}(2N + 313 - (N + 351)) \\
&= B_{\bar{N}}(N - 32) + B_{\bar{N}}(31) + B_{\bar{N}}(N - 38) = (N - 32) + 31 + (N - 38) = \mathbf{2N} - \mathbf{39} \\
&(N \geq 317)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 314) &= B_{\bar{N}}(2N + 314 - B_{\bar{N}}(2N + 313)) + B_{\bar{N}}(2N + 314 - B_{\bar{N}}(2N + 312)) + B_{\bar{N}}(2N + 314 - B_{\bar{N}}(2N + 311)) \\
&= B_{\bar{N}}(2N + 314 - (2N - 39)) + B_{\bar{N}}(2N + 314 - (N + 345)) + B_{\bar{N}}(2N + 314 - (2N + 282)) \\
&= B_{\bar{N}}(353) + B_{\bar{N}}(N - 31) + B_{\bar{N}}(32) = 353 + (N - 31) + 32 = \mathbf{N} + \mathbf{354} \\
&(N \geq 353)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 315) &= B_{\bar{N}}(2N + 315 - B_{\bar{N}}(2N + 314)) + B_{\bar{N}}(2N + 315 - B_{\bar{N}}(2N + 313)) + B_{\bar{N}}(2N + 315 - B_{\bar{N}}(2N + 312)) \\
&= B_{\bar{N}}(2N + 315 - (N + 354)) + B_{\bar{N}}(2N + 315 - (2N - 39)) + B_{\bar{N}}(2N + 315 - (N + 345)) \\
&= B_{\bar{N}}(N - 39) + B_{\bar{N}}(354) + B_{\bar{N}}(N - 30) = (N - 39) + 354 + (N - 30) = \mathbf{2N} + \mathbf{285} \\
&(N \geq 354)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 316) &= B_{\bar{N}}(2N + 316 - B_{\bar{N}}(2N + 315)) + B_{\bar{N}}(2N + 316 - B_{\bar{N}}(2N + 314)) + B_{\bar{N}}(2N + 316 - B_{\bar{N}}(2N + 313)) \\
&= B_{\bar{N}}(2N + 316 - (2N + 285)) + B_{\bar{N}}(2N + 316 - (N + 354)) + B_{\bar{N}}(2N + 316 - (2N - 39)) \\
&= B_{\bar{N}}(31) + B_{\bar{N}}(N - 38) + B_{\bar{N}}(355) = 31 + (N - 38) + 355 = \mathbf{N} + \mathbf{348} \\
&(N \geq 355)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 317) &= B_{\bar{N}}(2N + 317 - B_{\bar{N}}(2N + 316)) + B_{\bar{N}}(2N + 317 - B_{\bar{N}}(2N + 315)) + B_{\bar{N}}(2N + 317 - B_{\bar{N}}(2N + 314)) \\
&= B_{\bar{N}}(2N + 317 - (N + 348)) + B_{\bar{N}}(2N + 317 - (2N + 285)) + B_{\bar{N}}(2N + 317 - (N + 354)) \\
&= B_{\bar{N}}(N - 31) + B_{\bar{N}}(32) + B_{\bar{N}}(N - 37) = (N - 31) + 32 + (N - 37) = \mathbf{2N} - \mathbf{36} \\
&(N \geq 318)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 318) &= B_{\bar{N}}(2N + 318 - B_{\bar{N}}(2N + 317)) + B_{\bar{N}}(2N + 318 - B_{\bar{N}}(2N + 316)) + B_{\bar{N}}(2N + 318 - B_{\bar{N}}(2N + 315)) \\
&= B_{\bar{N}}(2N + 318 - (2N - 36)) + B_{\bar{N}}(2N + 318 - (N + 348)) + B_{\bar{N}}(2N + 318 - (2N + 285)) \\
&= B_{\bar{N}}(354) + B_{\bar{N}}(N - 30) + B_{\bar{N}}(33) = 354 + (N - 30) + 33 = \mathbf{N} + \mathbf{357} \\
&(N \geq 354)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 319) &= B_{\bar{N}}(2N + 319 - B_{\bar{N}}(2N + 318)) + B_{\bar{N}}(2N + 319 - B_{\bar{N}}(2N + 317)) + B_{\bar{N}}(2N + 319 - B_{\bar{N}}(2N + 316)) \\
&= B_{\bar{N}}(2N + 319 - (N + 357)) + B_{\bar{N}}(2N + 319 - (2N - 36)) + B_{\bar{N}}(2N + 319 - (N + 348)) \\
&= B_{\bar{N}}(N - 38) + B_{\bar{N}}(355) + B_{\bar{N}}(N - 29) = (N - 38) + 355 + (N - 29) = \mathbf{2N} + \mathbf{288} \\
&(N \geq 355)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 320) &= B_{\bar{N}}(2N + 320 - B_{\bar{N}}(2N + 319)) + B_{\bar{N}}(2N + 320 - B_{\bar{N}}(2N + 318)) + B_{\bar{N}}(2N + 320 - B_{\bar{N}}(2N + 317)) \\
&= B_{\bar{N}}(2N + 320 - (2N + 288)) + B_{\bar{N}}(2N + 320 - (N + 357)) + B_{\bar{N}}(2N + 320 - (2N - 36)) \\
&= B_{\bar{N}}(32) + B_{\bar{N}}(N - 37) + B_{\bar{N}}(356) = 32 + (N - 37) + 356 = \mathbf{N} + \mathbf{351} \\
&(N \geq 356)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 321) &= B_{\bar{N}}(2N + 321 - B_{\bar{N}}(2N + 320)) + B_{\bar{N}}(2N + 321 - B_{\bar{N}}(2N + 319)) + B_{\bar{N}}(2N + 321 - B_{\bar{N}}(2N + 318)) \\
&= B_{\bar{N}}(2N + 321 - (N + 351)) + B_{\bar{N}}(2N + 321 - (2N + 288)) + B_{\bar{N}}(2N + 321 - (N + 357)) \\
&= B_{\bar{N}}(N - 30) + B_{\bar{N}}(33) + B_{\bar{N}}(N - 36) = (N - 30) + 33 + (N - 36) = \mathbf{2N} - \mathbf{33} \\
&(N \geq 319)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 322) &= B_{\bar{N}}(2N + 322 - B_{\bar{N}}(2N + 321)) + B_{\bar{N}}(2N + 322 - B_{\bar{N}}(2N + 320)) + B_{\bar{N}}(2N + 322 - B_{\bar{N}}(2N + 319)) \\
&= B_{\bar{N}}(2N + 322 - (2N - 33)) + B_{\bar{N}}(2N + 322 - (N + 351)) + B_{\bar{N}}(2N + 322 - (2N + 288)) \\
&= B_{\bar{N}}(355) + B_{\bar{N}}(N - 29) + B_{\bar{N}}(34) = 355 + (N - 29) + 34 = \mathbf{N} + \mathbf{360} \\
&(N \geq 355)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 323) &= B_{\bar{N}}(2N + 323 - B_{\bar{N}}(2N + 322)) + B_{\bar{N}}(2N + 323 - B_{\bar{N}}(2N + 321)) + B_{\bar{N}}(2N + 323 - B_{\bar{N}}(2N + 320)) \\
&= B_{\bar{N}}(2N + 323 - (N + 360)) + B_{\bar{N}}(2N + 323 - (2N - 33)) + B_{\bar{N}}(2N + 323 - (N + 351)) \\
&= B_{\bar{N}}(N - 37) + B_{\bar{N}}(356) + B_{\bar{N}}(N - 28) = (N - 37) + 356 + (N - 28) = \mathbf{2N} + \mathbf{291} \\
&(N \geq 356)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 324) &= B_{\bar{N}}(2N + 324 - B_{\bar{N}}(2N + 323)) + B_{\bar{N}}(2N + 324 - B_{\bar{N}}(2N + 322)) + B_{\bar{N}}(2N + 324 - B_{\bar{N}}(2N + 321)) \\
&= B_{\bar{N}}(2N + 324 - (2N + 291)) + B_{\bar{N}}(2N + 324 - (N + 360)) + B_{\bar{N}}(2N + 324 - (2N - 33)) \\
&= B_{\bar{N}}(33) + B_{\bar{N}}(N - 36) + B_{\bar{N}}(357) = 33 + (N - 36) + 357 = \mathbf{N} + \mathbf{354} \\
&(N \geq 357)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 325) &= B_{\bar{N}}(2N + 325 - B_{\bar{N}}(2N + 324)) + B_{\bar{N}}(2N + 325 - B_{\bar{N}}(2N + 323)) + B_{\bar{N}}(2N + 325 - B_{\bar{N}}(2N + 322)) \\
&= B_{\bar{N}}(2N + 325 - (N + 354)) + B_{\bar{N}}(2N + 325 - (2N + 291)) + B_{\bar{N}}(2N + 325 - (N + 360)) \\
&= B_{\bar{N}}(N - 29) + B_{\bar{N}}(34) + B_{\bar{N}}(N - 35) = (N - 29) + 34 + (N - 35) = \mathbf{2N} - \mathbf{30} \\
&(N \geq 320)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 326) &= B_{\bar{N}}(2N + 326 - B_{\bar{N}}(2N + 325)) + B_{\bar{N}}(2N + 326 - B_{\bar{N}}(2N + 324)) + B_{\bar{N}}(2N + 326 - B_{\bar{N}}(2N + 323)) \\
&= B_{\bar{N}}(2N + 326 - (2N - 30)) + B_{\bar{N}}(2N + 326 - (N + 354)) + B_{\bar{N}}(2N + 326 - (2N + 291)) \\
&= B_{\bar{N}}(356) + B_{\bar{N}}(N - 28) + B_{\bar{N}}(35) = 356 + (N - 28) + 35 = \mathbf{N} + \mathbf{363} \\
&(N \geq 356)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 327) &= B_{\bar{N}}(2N + 327 - B_{\bar{N}}(2N + 326)) + B_{\bar{N}}(2N + 327 - B_{\bar{N}}(2N + 325)) + B_{\bar{N}}(2N + 327 - B_{\bar{N}}(2N + 324)) \\
&= B_{\bar{N}}(2N + 327 - (N + 363)) + B_{\bar{N}}(2N + 327 - (2N - 30)) + B_{\bar{N}}(2N + 327 - (N + 354)) \\
&= B_{\bar{N}}(N - 36) + B_{\bar{N}}(357) + B_{\bar{N}}(N - 27) = (N - 36) + 357 + (N - 27) = \mathbf{2N} + \mathbf{294} \\
&(N \geq 357)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 328) &= B_{\bar{N}}(2N + 328 - B_{\bar{N}}(2N + 327)) + B_{\bar{N}}(2N + 328 - B_{\bar{N}}(2N + 326)) + B_{\bar{N}}(2N + 328 - B_{\bar{N}}(2N + 325)) \\
&= B_{\bar{N}}(2N + 328 - (2N + 294)) + B_{\bar{N}}(2N + 328 - (N + 363)) + B_{\bar{N}}(2N + 328 - (2N - 30)) \\
&= B_{\bar{N}}(34) + B_{\bar{N}}(N - 35) + B_{\bar{N}}(358) = 34 + (N - 35) + 358 = \mathbf{N} + \mathbf{357} \\
&(N \geq 358)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 329) &= B_{\bar{N}}(2N + 329 - B_{\bar{N}}(2N + 328)) + B_{\bar{N}}(2N + 329 - B_{\bar{N}}(2N + 327)) + B_{\bar{N}}(2N + 329 - B_{\bar{N}}(2N + 326)) \\
&= B_{\bar{N}}(2N + 329 - (N + 357)) + B_{\bar{N}}(2N + 329 - (2N + 294)) + B_{\bar{N}}(2N + 329 - (N + 363)) \\
&= B_{\bar{N}}(N - 28) + B_{\bar{N}}(35) + B_{\bar{N}}(N - 34) = (N - 28) + 35 + (N - 34) = \mathbf{2N} - \mathbf{27} \\
&(N \geq 321)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 330) &= B_{\bar{N}}(2N + 330 - B_{\bar{N}}(2N + 329)) + B_{\bar{N}}(2N + 330 - B_{\bar{N}}(2N + 328)) + B_{\bar{N}}(2N + 330 - B_{\bar{N}}(2N + 327)) \\
&= B_{\bar{N}}(2N + 330 - (2N - 27)) + B_{\bar{N}}(2N + 330 - (N + 357)) + B_{\bar{N}}(2N + 330 - (2N + 294)) \\
&= B_{\bar{N}}(357) + B_{\bar{N}}(N - 27) + B_{\bar{N}}(36) = 357 + (N - 27) + 36 = \mathbf{N} + \mathbf{366} \\
&(N \geq 357)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 331) &= B_{\bar{N}}(2N + 331 - B_{\bar{N}}(2N + 330)) + B_{\bar{N}}(2N + 331 - B_{\bar{N}}(2N + 329)) + B_{\bar{N}}(2N + 331 - B_{\bar{N}}(2N + 328)) \\
&= B_{\bar{N}}(2N + 331 - (N + 366)) + B_{\bar{N}}(2N + 331 - (2N - 27)) + B_{\bar{N}}(2N + 331 - (N + 357)) \\
&= B_{\bar{N}}(N - 35) + B_{\bar{N}}(358) + B_{\bar{N}}(N - 26) = (N - 35) + 358 + (N - 26) = \mathbf{2N} + \mathbf{297} \\
&(N \geq 361)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 332) &= B_{\bar{N}}(2N + 332 - B_{\bar{N}}(2N + 331)) + B_{\bar{N}}(2N + 332 - B_{\bar{N}}(2N + 330)) + B_{\bar{N}}(2N + 332 - B_{\bar{N}}(2N + 329)) \\
&= B_{\bar{N}}(2N + 332 - (2N + 297)) + B_{\bar{N}}(2N + 332 - (N + 366)) + B_{\bar{N}}(2N + 332 - (2N - 27)) \\
&= B_{\bar{N}}(35) + B_{\bar{N}}(N - 34) + B_{\bar{N}}(359) = 35 + (N - 34) + 359 = \mathbf{N} + \mathbf{360} \\
&(N \geq 362)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 333) &= B_{\bar{N}}(2N + 333 - B_{\bar{N}}(2N + 332)) + B_{\bar{N}}(2N + 333 - B_{\bar{N}}(2N + 331)) + B_{\bar{N}}(2N + 333 - B_{\bar{N}}(2N + 330)) \\
&= B_{\bar{N}}(2N + 333 - (N + 360)) + B_{\bar{N}}(2N + 333 - (2N + 297)) + B_{\bar{N}}(2N + 333 - (N + 366)) \\
&= B_{\bar{N}}(N - 27) + B_{\bar{N}}(36) + B_{\bar{N}}(N - 33) = (N - 27) + 36 + (N - 33) = \mathbf{2N} - \mathbf{24} \\
&(N \geq 363)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 334) &= B_{\bar{N}}(2N + 334 - B_{\bar{N}}(2N + 333)) + B_{\bar{N}}(2N + 334 - B_{\bar{N}}(2N + 332)) + B_{\bar{N}}(2N + 334 - B_{\bar{N}}(2N + 331)) \\
&= B_{\bar{N}}(2N + 334 - (2N - 24)) + B_{\bar{N}}(2N + 334 - (N + 360)) + B_{\bar{N}}(2N + 334 - (2N + 297)) \\
&= B_{\bar{N}}(358) + B_{\bar{N}}(N - 26) + B_{\bar{N}}(37) = 358 + (N - 26) + 37 = \mathbf{N} + \mathbf{369} \\
&(N \geq 358)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 335) &= B_{\bar{N}}(2N + 335 - B_{\bar{N}}(2N + 334)) + B_{\bar{N}}(2N + 335 - B_{\bar{N}}(2N + 333)) + B_{\bar{N}}(2N + 335 - B_{\bar{N}}(2N + 332)) \\
&= B_{\bar{N}}(2N + 335 - (N + 369)) + B_{\bar{N}}(2N + 335 - (2N - 24)) + B_{\bar{N}}(2N + 335 - (N + 360)) \\
&= B_{\bar{N}}(N - 34) + B_{\bar{N}}(359) + B_{\bar{N}}(N - 25) = (N - 34) + 359 + (N - 25) = \mathbf{2N} + \mathbf{300} \\
&(N \geq 363)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 336) &= B_{\bar{N}}(2N + 336 - B_{\bar{N}}(2N + 335)) + B_{\bar{N}}(2N + 336 - B_{\bar{N}}(2N + 334)) + B_{\bar{N}}(2N + 336 - B_{\bar{N}}(2N + 333)) \\
&= B_{\bar{N}}(2N + 336 - (2N + 300)) + B_{\bar{N}}(2N + 336 - (N + 369)) + B_{\bar{N}}(2N + 336 - (2N - 24)) \\
&= B_{\bar{N}}(36) + B_{\bar{N}}(N - 33) + B_{\bar{N}}(360) = 36 + (N - 33) + 360 = \mathbf{N} + \mathbf{363} \\
&(N \geq 364)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 337) &= B_{\bar{N}}(2N + 337 - B_{\bar{N}}(2N + 336)) + B_{\bar{N}}(2N + 337 - B_{\bar{N}}(2N + 335)) + B_{\bar{N}}(2N + 337 - B_{\bar{N}}(2N + 334)) \\
&= B_{\bar{N}}(2N + 337 - (N + 363)) + B_{\bar{N}}(2N + 337 - (2N + 300)) + B_{\bar{N}}(2N + 337 - (N + 369)) \\
&= B_{\bar{N}}(N - 26) + B_{\bar{N}}(37) + B_{\bar{N}}(N - 32) = (N - 26) + 37 + (N - 32) = \mathbf{2N} - \mathbf{21} \\
&(N \geq 365)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 338) &= B_{\bar{N}}(2N + 338 - B_{\bar{N}}(2N + 337)) + B_{\bar{N}}(2N + 338 - B_{\bar{N}}(2N + 336)) + B_{\bar{N}}(2N + 338 - B_{\bar{N}}(2N + 335)) \\
&= B_{\bar{N}}(2N + 338 - (2N - 21)) + B_{\bar{N}}(2N + 338 - (N + 363)) + B_{\bar{N}}(2N + 338 - (2N + 300)) \\
&= B_{\bar{N}}(359) + B_{\bar{N}}(N - 25) + B_{\bar{N}}(38) = 359 + (N - 25) + 38 = \mathbf{N} + \mathbf{372} \\
&(N \geq 359)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 339) &= B_{\bar{N}}(2N + 339 - B_{\bar{N}}(2N + 338)) + B_{\bar{N}}(2N + 339 - B_{\bar{N}}(2N + 337)) + B_{\bar{N}}(2N + 339 - B_{\bar{N}}(2N + 336)) \\
&= B_{\bar{N}}(2N + 339 - (N + 372)) + B_{\bar{N}}(2N + 339 - (2N - 21)) + B_{\bar{N}}(2N + 339 - (N + 363)) \\
&= B_{\bar{N}}(N - 33) + B_{\bar{N}}(360) + B_{\bar{N}}(N - 24) = (N - 33) + 360 + (N - 24) = \mathbf{2N} + \mathbf{303} \\
&(N \geq 364)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 340) &= B_{\bar{N}}(2N + 340 - B_{\bar{N}}(2N + 339)) + B_{\bar{N}}(2N + 340 - B_{\bar{N}}(2N + 338)) + B_{\bar{N}}(2N + 340 - B_{\bar{N}}(2N + 337)) \\
&= B_{\bar{N}}(2N + 340 - (2N + 303)) + B_{\bar{N}}(2N + 340 - (N + 372)) + B_{\bar{N}}(2N + 340 - (2N - 21)) \\
&= B_{\bar{N}}(37) + B_{\bar{N}}(N - 32) + B_{\bar{N}}(361) = 37 + (N - 32) + 361 = \mathbf{N} + \mathbf{366} \\
&(N \geq 365)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 341) &= B_{\bar{N}}(2N + 341 - B_{\bar{N}}(2N + 340)) + B_{\bar{N}}(2N + 341 - B_{\bar{N}}(2N + 339)) + B_{\bar{N}}(2N + 341 - B_{\bar{N}}(2N + 338)) \\
&= B_{\bar{N}}(2N + 341 - (N + 366)) + B_{\bar{N}}(2N + 341 - (2N + 303)) + B_{\bar{N}}(2N + 341 - (N + 372)) \\
&= B_{\bar{N}}(N - 25) + B_{\bar{N}}(38) + B_{\bar{N}}(N - 31) = (N - 25) + 38 + (N - 31) = \mathbf{2N} - \mathbf{18} \\
&(N \geq 366)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 342) &= B_{\bar{N}}(2N + 342 - B_{\bar{N}}(2N + 341)) + B_{\bar{N}}(2N + 342 - B_{\bar{N}}(2N + 340)) + B_{\bar{N}}(2N + 342 - B_{\bar{N}}(2N + 339)) \\
&= B_{\bar{N}}(2N + 342 - (2N - 18)) + B_{\bar{N}}(2N + 342 - (N + 366)) + B_{\bar{N}}(2N + 342 - (2N + 303)) \\
&= B_{\bar{N}}(360) + B_{\bar{N}}(N - 24) + B_{\bar{N}}(39) = 360 + (N - 24) + 39 = \mathbf{N} + \mathbf{375} \\
&(N \geq 360)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 343) &= B_{\bar{N}}(2N + 343 - B_{\bar{N}}(2N + 342)) + B_{\bar{N}}(2N + 343 - B_{\bar{N}}(2N + 341)) + B_{\bar{N}}(2N + 343 - B_{\bar{N}}(2N + 340)) \\
&= B_{\bar{N}}(2N + 343 - (N + 375)) + B_{\bar{N}}(2N + 343 - (2N - 18)) + B_{\bar{N}}(2N + 343 - (N + 366)) \\
&= B_{\bar{N}}(N - 32) + B_{\bar{N}}(361) + B_{\bar{N}}(N - 23) = (N - 32) + 361 + (N - 23) = \mathbf{2N} + \mathbf{306} \\
&(N \geq 365)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 344) &= B_{\bar{N}}(2N + 344 - B_{\bar{N}}(2N + 343)) + B_{\bar{N}}(2N + 344 - B_{\bar{N}}(2N + 342)) + B_{\bar{N}}(2N + 344 - B_{\bar{N}}(2N + 341)) \\
&= B_{\bar{N}}(2N + 344 - (2N + 306)) + B_{\bar{N}}(2N + 344 - (N + 375)) + B_{\bar{N}}(2N + 344 - (2N - 18)) \\
&= B_{\bar{N}}(38) + B_{\bar{N}}(N - 31) + B_{\bar{N}}(362) = 38 + (N - 31) + 362 = \mathbf{N} + \mathbf{369} \\
&(N \geq 366)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 345) &= B_{\bar{N}}(2N + 345 - B_{\bar{N}}(2N + 344)) + B_{\bar{N}}(2N + 345 - B_{\bar{N}}(2N + 343)) + B_{\bar{N}}(2N + 345 - B_{\bar{N}}(2N + 342)) \\
&= B_{\bar{N}}(2N + 345 - (N + 369)) + B_{\bar{N}}(2N + 345 - (2N + 306)) + B_{\bar{N}}(2N + 345 - (N + 375)) \\
&= B_{\bar{N}}(N - 24) + B_{\bar{N}}(39) + B_{\bar{N}}(N - 30) = (N - 24) + 39 + (N - 30) = \mathbf{2N} - \mathbf{15} \\
&(N \geq 367)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 346) &= B_{\bar{N}}(2N + 346 - B_{\bar{N}}(2N + 345)) + B_{\bar{N}}(2N + 346 - B_{\bar{N}}(2N + 344)) + B_{\bar{N}}(2N + 346 - B_{\bar{N}}(2N + 343)) \\
&= B_{\bar{N}}(2N + 346 - (2N - 15)) + B_{\bar{N}}(2N + 346 - (N + 369)) + B_{\bar{N}}(2N + 346 - (2N + 306)) \\
&= B_{\bar{N}}(361) + B_{\bar{N}}(N - 23) + B_{\bar{N}}(40) = 361 + (N - 23) + 40 = \mathbf{N} + \mathbf{378} \\
&(N \geq 361)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 347) &= B_{\bar{N}}(2N + 347 - B_{\bar{N}}(2N + 346)) + B_{\bar{N}}(2N + 347 - B_{\bar{N}}(2N + 345)) + B_{\bar{N}}(2N + 347 - B_{\bar{N}}(2N + 344)) \\
&= B_{\bar{N}}(2N + 347 - (N + 378)) + B_{\bar{N}}(2N + 347 - (2N - 15)) + B_{\bar{N}}(2N + 347 - (N + 369)) \\
&= B_{\bar{N}}(N - 31) + B_{\bar{N}}(362) + B_{\bar{N}}(N - 22) = (N - 31) + 362 + (N - 22) = \mathbf{2N} + \mathbf{309} \\
&(N \geq 366)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 348) &= B_{\bar{N}}(2N + 348 - B_{\bar{N}}(2N + 347)) + B_{\bar{N}}(2N + 348 - B_{\bar{N}}(2N + 346)) + B_{\bar{N}}(2N + 348 - B_{\bar{N}}(2N + 345)) \\
&= B_{\bar{N}}(2N + 348 - (2N + 309)) + B_{\bar{N}}(2N + 348 - (N + 378)) + B_{\bar{N}}(2N + 348 - (2N - 15)) \\
&= B_{\bar{N}}(39) + B_{\bar{N}}(N - 30) + B_{\bar{N}}(363) = 39 + (N - 30) + 363 = \mathbf{N} + \mathbf{372} \\
&(N \geq 367)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 349) &= B_{\bar{N}}(2N + 349 - B_{\bar{N}}(2N + 348)) + B_{\bar{N}}(2N + 349 - B_{\bar{N}}(2N + 347)) + B_{\bar{N}}(2N + 349 - B_{\bar{N}}(2N + 346)) \\
&= B_{\bar{N}}(2N + 349 - (N + 372)) + B_{\bar{N}}(2N + 349 - (2N + 309)) + B_{\bar{N}}(2N + 349 - (N + 378)) \\
&= B_{\bar{N}}(N - 23) + B_{\bar{N}}(40) + B_{\bar{N}}(N - 29) = (N - 23) + 40 + (N - 29) = \mathbf{2N} - \mathbf{12} \\
&(N \geq 368)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 350) &= B_{\bar{N}}(2N + 350 - B_{\bar{N}}(2N + 349)) + B_{\bar{N}}(2N + 350 - B_{\bar{N}}(2N + 348)) + B_{\bar{N}}(2N + 350 - B_{\bar{N}}(2N + 347)) \\
&= B_{\bar{N}}(2N + 350 - (2N - 12)) + B_{\bar{N}}(2N + 350 - (N + 372)) + B_{\bar{N}}(2N + 350 - (2N + 309)) \\
&= B_{\bar{N}}(362) + B_{\bar{N}}(N - 22) + B_{\bar{N}}(41) = 362 + (N - 22) + 41 = \mathbf{N} + \mathbf{381} \\
&(N \geq 362)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 351) &= B_{\bar{N}}(2N + 351 - B_{\bar{N}}(2N + 350)) + B_{\bar{N}}(2N + 351 - B_{\bar{N}}(2N + 349)) + B_{\bar{N}}(2N + 351 - B_{\bar{N}}(2N + 348)) \\
&= B_{\bar{N}}(2N + 351 - (N + 381)) + B_{\bar{N}}(2N + 351 - (2N - 12)) + B_{\bar{N}}(2N + 351 - (N + 372)) \\
&= B_{\bar{N}}(N - 30) + B_{\bar{N}}(363) + B_{\bar{N}}(N - 21) = (N - 30) + 363 + (N - 21) = \mathbf{2N} + \mathbf{312} \\
&(N \geq 367)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 352) &= B_{\bar{N}}(2N + 352 - B_{\bar{N}}(2N + 351)) + B_{\bar{N}}(2N + 352 - B_{\bar{N}}(2N + 350)) + B_{\bar{N}}(2N + 352 - B_{\bar{N}}(2N + 349)) \\
&= B_{\bar{N}}(2N + 352 - (2N + 312)) + B_{\bar{N}}(2N + 352 - (N + 381)) + B_{\bar{N}}(2N + 352 - (2N - 12)) \\
&= B_{\bar{N}}(40) + B_{\bar{N}}(N - 29) + B_{\bar{N}}(364) = 40 + (N - 29) + 364 = \mathbf{N} + \mathbf{375} \\
&(N \geq 368)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 353) &= B_{\bar{N}}(2N + 353 - B_{\bar{N}}(2N + 352)) + B_{\bar{N}}(2N + 353 - B_{\bar{N}}(2N + 351)) + B_{\bar{N}}(2N + 353 - B_{\bar{N}}(2N + 350)) \\
&= B_{\bar{N}}(2N + 353 - (N + 375)) + B_{\bar{N}}(2N + 353 - (2N + 312)) + B_{\bar{N}}(2N + 353 - (N + 381)) \\
&= B_{\bar{N}}(N - 22) + B_{\bar{N}}(41) + B_{\bar{N}}(N - 28) = (N - 22) + 41 + (N - 28) = \mathbf{2N} - \mathbf{9} \\
&(N \geq 369)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 354) &= B_{\bar{N}}(2N + 354 - B_{\bar{N}}(2N + 353)) + B_{\bar{N}}(2N + 354 - B_{\bar{N}}(2N + 352)) + B_{\bar{N}}(2N + 354 - B_{\bar{N}}(2N + 351)) \\
&= B_{\bar{N}}(2N + 354 - (2N - 9)) + B_{\bar{N}}(2N + 354 - (N + 375)) + B_{\bar{N}}(2N + 354 - (2N + 312)) \\
&= B_{\bar{N}}(363) + B_{\bar{N}}(N - 21) + B_{\bar{N}}(42) = 363 + (N - 21) + 42 = \mathbf{N} + \mathbf{384} \\
&(N \geq 363)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 355) &= B_{\bar{N}}(2N + 355 - B_{\bar{N}}(2N + 354)) + B_{\bar{N}}(2N + 355 - B_{\bar{N}}(2N + 353)) + B_{\bar{N}}(2N + 355 - B_{\bar{N}}(2N + 352)) \\
&= B_{\bar{N}}(2N + 355 - (N + 384)) + B_{\bar{N}}(2N + 355 - (2N - 9)) + B_{\bar{N}}(2N + 355 - (N + 375)) \\
&= B_{\bar{N}}(N - 29) + B_{\bar{N}}(364) + B_{\bar{N}}(N - 20) = (N - 29) + 364 + (N - 20) = \mathbf{2N} + \mathbf{315} \\
&(N \geq 368)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 356) &= B_{\bar{N}}(2N + 356 - B_{\bar{N}}(2N + 355)) + B_{\bar{N}}(2N + 356 - B_{\bar{N}}(2N + 354)) + B_{\bar{N}}(2N + 356 - B_{\bar{N}}(2N + 353)) \\
&= B_{\bar{N}}(2N + 356 - (2N + 315)) + B_{\bar{N}}(2N + 356 - (N + 384)) + B_{\bar{N}}(2N + 356 - (2N - 9)) \\
&= B_{\bar{N}}(41) + B_{\bar{N}}(N - 28) + B_{\bar{N}}(365) = 41 + (N - 28) + 365 = \mathbf{N} + \mathbf{378} \\
&(N \geq 369)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 357) &= B_{\bar{N}}(2N + 357 - B_{\bar{N}}(2N + 356)) + B_{\bar{N}}(2N + 357 - B_{\bar{N}}(2N + 355)) + B_{\bar{N}}(2N + 357 - B_{\bar{N}}(2N + 354)) \\
&= B_{\bar{N}}(2N + 357 - (N + 378)) + B_{\bar{N}}(2N + 357 - (2N + 315)) + B_{\bar{N}}(2N + 357 - (N + 384)) \\
&= B_{\bar{N}}(N - 21) + B_{\bar{N}}(42) + B_{\bar{N}}(N - 27) = (N - 21) + 42 + (N - 27) = \mathbf{2N} - \mathbf{6} \\
&(N \geq 370)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 358) &= B_{\bar{N}}(2N + 358 - B_{\bar{N}}(2N + 357)) + B_{\bar{N}}(2N + 358 - B_{\bar{N}}(2N + 356)) + B_{\bar{N}}(2N + 358 - B_{\bar{N}}(2N + 355)) \\
&= B_{\bar{N}}(2N + 358 - (2N - 6)) + B_{\bar{N}}(2N + 358 - (N + 378)) + B_{\bar{N}}(2N + 358 - (2N + 315)) \\
&= B_{\bar{N}}(364) + B_{\bar{N}}(N - 20) + B_{\bar{N}}(43) = 364 + (N - 20) + 43 = \mathbf{N} + \mathbf{387} \\
&(N \geq 364)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 359) &= B_{\bar{N}}(2N + 359 - B_{\bar{N}}(2N + 358)) + B_{\bar{N}}(2N + 359 - B_{\bar{N}}(2N + 357)) + B_{\bar{N}}(2N + 359 - B_{\bar{N}}(2N + 356)) \\
&= B_{\bar{N}}(2N + 359 - (N + 387)) + B_{\bar{N}}(2N + 359 - (2N - 6)) + B_{\bar{N}}(2N + 359 - (N + 378)) \\
&= B_{\bar{N}}(N - 28) + B_{\bar{N}}(365) + B_{\bar{N}}(N - 19) = (N - 28) + 365 + (N - 19) = \mathbf{2N} + \mathbf{318} \\
&(N \geq 365)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 360) &= B_{\bar{N}}(2N + 360 - B_{\bar{N}}(2N + 359)) + B_{\bar{N}}(2N + 360 - B_{\bar{N}}(2N + 358)) + B_{\bar{N}}(2N + 360 - B_{\bar{N}}(2N + 357)) \\
&= B_{\bar{N}}(2N + 360 - (2N + 318)) + B_{\bar{N}}(2N + 360 - (N + 387)) + B_{\bar{N}}(2N + 360 - (2N - 6)) \\
&= B_{\bar{N}}(42) + B_{\bar{N}}(N - 27) + B_{\bar{N}}(366) = 42 + (N - 27) + 366 = \mathbf{N} + \mathbf{381} \\
&(N \geq 366)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 361) &= B_{\bar{N}}(2N + 361 - B_{\bar{N}}(2N + 360)) + B_{\bar{N}}(2N + 361 - B_{\bar{N}}(2N + 359)) + B_{\bar{N}}(2N + 361 - B_{\bar{N}}(2N + 358)) \\
&= B_{\bar{N}}(2N + 361 - (N + 381)) + B_{\bar{N}}(2N + 361 - (2N + 318)) + B_{\bar{N}}(2N + 361 - (N + 387)) \\
&= B_{\bar{N}}(N - 20) + B_{\bar{N}}(43) + B_{\bar{N}}(N - 26) = (N - 20) + 43 + (N - 26) = \mathbf{2N} - \mathbf{3} \\
&(N \geq 43)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 362) &= B_{\bar{N}}(2N + 362 - B_{\bar{N}}(2N + 361)) + B_{\bar{N}}(2N + 362 - B_{\bar{N}}(2N + 360)) + B_{\bar{N}}(2N + 362 - B_{\bar{N}}(2N + 359)) \\
&= B_{\bar{N}}(2N + 362 - (2N - 3)) + B_{\bar{N}}(2N + 362 - (N + 381)) + B_{\bar{N}}(2N + 362 - (2N + 318)) \\
&= B_{\bar{N}}(365) + B_{\bar{N}}(N - 19) + B_{\bar{N}}(44) = 365 + (N - 19) + 44 = \mathbf{N} + \mathbf{390} \\
&(N \geq 365)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 363) &= B_{\bar{N}}(2N + 363 - B_{\bar{N}}(2N + 362)) + B_{\bar{N}}(2N + 363 - B_{\bar{N}}(2N + 361)) + B_{\bar{N}}(2N + 363 - B_{\bar{N}}(2N + 360)) \\
&= B_{\bar{N}}(2N + 363 - (N + 390)) + B_{\bar{N}}(2N + 363 - (2N - 3)) + B_{\bar{N}}(2N + 363 - (N + 381)) \\
&= B_{\bar{N}}(N - 27) + B_{\bar{N}}(366) + B_{\bar{N}}(N - 18) = (N - 27) + 366 + (N - 18) = \mathbf{2N} + \mathbf{321} \\
&(N \geq 366)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 364) &= B_{\bar{N}}(2N + 364 - B_{\bar{N}}(2N + 363)) + B_{\bar{N}}(2N + 364 - B_{\bar{N}}(2N + 362)) + B_{\bar{N}}(2N + 364 - B_{\bar{N}}(2N + 361)) \\
&= B_{\bar{N}}(2N + 364 - (2N + 321)) + B_{\bar{N}}(2N + 364 - (N + 390)) + B_{\bar{N}}(2N + 364 - (2N - 3)) \\
&= B_{\bar{N}}(43) + B_{\bar{N}}(N - 26) + B_{\bar{N}}(367) = 43 + (N - 26) + 367 = \mathbf{N} + \mathbf{384} \\
&(N \geq 377)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 365) &= B_{\bar{N}}(2N + 365 - B_{\bar{N}}(2N + 364)) + B_{\bar{N}}(2N + 365 - B_{\bar{N}}(2N + 363)) + B_{\bar{N}}(2N + 365 - B_{\bar{N}}(2N + 362)) \\
&= B_{\bar{N}}(2N + 365 - (N + 384)) + B_{\bar{N}}(2N + 365 - (2N + 321)) + B_{\bar{N}}(2N + 365 - (N + 390)) \\
&= B_{\bar{N}}(N - 19) + B_{\bar{N}}(44) + B_{\bar{N}}(N - 25) = (N - 19) + 44 + (N - 25) = \mathbf{2N} \\
&(N \geq 378)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 366) &= B_{\bar{N}}(2N + 366 - B_{\bar{N}}(2N + 365)) + B_{\bar{N}}(2N + 366 - B_{\bar{N}}(2N + 364)) + B_{\bar{N}}(2N + 366 - B_{\bar{N}}(2N + 363)) \\
&= B_{\bar{N}}(2N + 366 - 2N) + B_{\bar{N}}(2N + 366 - (N + 384)) + B_{\bar{N}}(2N + 366 - (2N + 321)) \\
&= B_{\bar{N}}(366) + B_{\bar{N}}(N - 18) + B_{\bar{N}}(45) = 366 + (N - 18) + 45 = \mathbf{N} + \mathbf{393} \\
&(N \geq 379)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 367) &= B_{\bar{N}}(2N + 367 - B_{\bar{N}}(2N + 366)) + B_{\bar{N}}(2N + 367 - B_{\bar{N}}(2N + 365)) + B_{\bar{N}}(2N + 367 - B_{\bar{N}}(2N + 364)) \\
&= B_{\bar{N}}(2N + 367 - (N + 393)) + B_{\bar{N}}(2N + 367 - 2N) + B_{\bar{N}}(2N + 367 - (N + 384)) \\
&= B_{\bar{N}}(N - 26) + B_{\bar{N}}(367) + B_{\bar{N}}(N - 17) = (N - 26) + 367 + (N - 17) = \mathbf{2N} + \mathbf{324} \\
&(N \geq 368)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 368) &= B_{\bar{N}}(2N + 368 - B_{\bar{N}}(2N + 367)) + B_{\bar{N}}(2N + 368 - B_{\bar{N}}(2N + 366)) + B_{\bar{N}}(2N + 368 - B_{\bar{N}}(2N + 365)) \\
&= B_{\bar{N}}(2N + 368 - (2N + 324)) + B_{\bar{N}}(2N + 368 - (N + 393)) + B_{\bar{N}}(2N + 368 - 2N) \\
&= B_{\bar{N}}(44) + B_{\bar{N}}(N - 25) + B_{\bar{N}}(368) = 44 + (N - 25) + 368 = \mathbf{N} + \mathbf{387} \\
&(N \geq 737)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 369) &= B_{\bar{N}}(2N + 369 - B_{\bar{N}}(2N + 368)) + B_{\bar{N}}(2N + 369 - B_{\bar{N}}(2N + 367)) + B_{\bar{N}}(2N + 369 - B_{\bar{N}}(2N + 366)) \\
&= B_{\bar{N}}(2N + 369 - (N + 387)) + B_{\bar{N}}(2N + 369 - (2N + 324)) + B_{\bar{N}}(2N + 369 - (N + 393)) \\
&= B_{\bar{N}}(N - 18) + B_{\bar{N}}(45) + B_{\bar{N}}(N - 24) = (N - 18) + 45 + (N - 24) = \mathbf{2N} + \mathbf{3} \\
&(N \geq 794)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 370) &= B_{\bar{N}}(2N + 370 - B_{\bar{N}}(2N + 369)) + B_{\bar{N}}(2N + 370 - B_{\bar{N}}(2N + 368)) + B_{\bar{N}}(2N + 370 - B_{\bar{N}}(2N + 367)) \\
&= B_{\bar{N}}(2N + 370 - (2N + 3)) + B_{\bar{N}}(2N + 370 - (N + 387)) + B_{\bar{N}}(2N + 370 - (2N + 324)) \\
&= B_{\bar{N}}(367) + B_{\bar{N}}(N - 17) + B_{\bar{N}}(46) = 367 + (N - 17) + 46 = \mathbf{N} + \mathbf{396} \\
&(N \geq 793)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 371) &= B_{\bar{N}}(2N + 371 - B_{\bar{N}}(2N + 370)) + B_{\bar{N}}(2N + 371 - B_{\bar{N}}(2N + 369)) + B_{\bar{N}}(2N + 371 - B_{\bar{N}}(2N + 368)) \\
&= B_{\bar{N}}(2N + 371 - (N + 396)) + B_{\bar{N}}(2N + 371 - (2N + 3)) + B_{\bar{N}}(2N + 371 - (N + 387)) \\
&= B_{\bar{N}}(N - 25) + B_{\bar{N}}(368) + B_{\bar{N}}(N - 16) = (N - 25) + 368 + (N - 16) = \mathbf{2N} + \mathbf{327} \\
&(N \geq 792)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 372) &= B_{\bar{N}}(2N + 372 - B_{\bar{N}}(2N + 371)) + B_{\bar{N}}(2N + 372 - B_{\bar{N}}(2N + 370)) + B_{\bar{N}}(2N + 372 - B_{\bar{N}}(2N + 369)) \\
&= B_{\bar{N}}(2N + 372 - (2N + 327)) + B_{\bar{N}}(2N + 372 - (N + 396)) + B_{\bar{N}}(2N + 372 - (2N + 3)) \\
&= B_{\bar{N}}(45) + B_{\bar{N}}(N - 24) + B_{\bar{N}}(369) = 45 + (N - 24) + 369 = \mathbf{N} + \mathbf{390} \\
&(N \geq 1065)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 373) &= B_{\bar{N}}(2N + 373 - B_{\bar{N}}(2N + 372)) + B_{\bar{N}}(2N + 373 - B_{\bar{N}}(2N + 371)) + B_{\bar{N}}(2N + 373 - B_{\bar{N}}(2N + 370)) \\
&= B_{\bar{N}}(2N + 373 - (N + 390)) + B_{\bar{N}}(2N + 373 - (2N + 327)) + B_{\bar{N}}(2N + 373 - (N + 396)) \\
&= B_{\bar{N}}(N - 17) + B_{\bar{N}}(46) + B_{\bar{N}}(N - 23) = (N - 17) + 46 + (N - 23) = \mathbf{2N} + \mathbf{6} \\
&(N \geq 1066)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 374) &= B_{\bar{N}}(2N + 374 - B_{\bar{N}}(2N + 373)) + B_{\bar{N}}(2N + 374 - B_{\bar{N}}(2N + 372)) + B_{\bar{N}}(2N + 374 - B_{\bar{N}}(2N + 371)) \\
&= B_{\bar{N}}(2N + 374 - (2N + 6)) + B_{\bar{N}}(2N + 374 - (N + 390)) + B_{\bar{N}}(2N + 374 - (2N + 327)) \\
&= B_{\bar{N}}(368) + B_{\bar{N}}(N - 16) + B_{\bar{N}}(47) = 368 + (N - 16) + 47 = \mathbf{N} + \mathbf{399} \\
&(N \geq 1066)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 375) &= B_{\bar{N}}(2N + 375 - B_{\bar{N}}(2N + 374)) + B_{\bar{N}}(2N + 375 - B_{\bar{N}}(2N + 373)) + B_{\bar{N}}(2N + 375 - B_{\bar{N}}(2N + 372)) \\
&= B_{\bar{N}}(2N + 375 - (N + 399)) + B_{\bar{N}}(2N + 375 - (2N + 6)) + B_{\bar{N}}(2N + 375 - (N + 390)) \\
&= B_{\bar{N}}(N - 24) + B_{\bar{N}}(369) + B_{\bar{N}}(N - 15) = (N - 24) + 369 + (N - 15) = \mathbf{2N} + \mathbf{330} \\
&(N \geq 369)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 376) &= B_{\bar{N}}(2N + 376 - B_{\bar{N}}(2N + 375)) + B_{\bar{N}}(2N + 376 - B_{\bar{N}}(2N + 374)) + B_{\bar{N}}(2N + 376 - B_{\bar{N}}(2N + 373)) \\
&= B_{\bar{N}}(2N + 376 - (2N + 330)) + B_{\bar{N}}(2N + 376 - (N + 399)) + B_{\bar{N}}(2N + 376 - (2N + 6)) \\
&= B_{\bar{N}}(46) + B_{\bar{N}}(N - 23) + B_{\bar{N}}(370) = 46 + (N - 23) + 370 = \mathbf{N} + \mathbf{393} \\
&(N \geq 370)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 377) &= B_{\bar{N}}(2N + 377 - B_{\bar{N}}(2N + 376)) + B_{\bar{N}}(2N + 377 - B_{\bar{N}}(2N + 375)) + B_{\bar{N}}(2N + 377 - B_{\bar{N}}(2N + 374)) \\
&= B_{\bar{N}}(2N + 377 - (N + 393)) + B_{\bar{N}}(2N + 377 - (2N + 330)) + B_{\bar{N}}(2N + 377 - (N + 399)) \\
&= B_{\bar{N}}(N - 16) + B_{\bar{N}}(47) + B_{\bar{N}}(N - 22) = (N - 16) + 47 + (N - 22) = \mathbf{2N} + \mathbf{9} \\
&(N \geq 70)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 378) &= B_{\bar{N}}(2N + 378 - B_{\bar{N}}(2N + 377)) + B_{\bar{N}}(2N + 378 - B_{\bar{N}}(2N + 376)) + B_{\bar{N}}(2N + 378 - B_{\bar{N}}(2N + 375)) \\
&= B_{\bar{N}}(2N + 378 - (2N + 9)) + B_{\bar{N}}(2N + 378 - (N + 393)) + B_{\bar{N}}(2N + 378 - (2N + 330)) \\
&= B_{\bar{N}}(369) + B_{\bar{N}}(N - 15) + B_{\bar{N}}(48) = 369 + (N - 15) + 48 = \mathbf{N} + \mathbf{402} \\
&(N \geq 369)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 379) &= B_{\bar{N}}(2N + 379 - B_{\bar{N}}(2N + 378)) + B_{\bar{N}}(2N + 379 - B_{\bar{N}}(2N + 377)) + B_{\bar{N}}(2N + 379 - B_{\bar{N}}(2N + 376)) \\
&= B_{\bar{N}}(2N + 379 - (N + 402)) + B_{\bar{N}}(2N + 379 - (2N + 9)) + B_{\bar{N}}(2N + 379 - (N + 393)) \\
&= B_{\bar{N}}(N - 23) + B_{\bar{N}}(370) + B_{\bar{N}}(N - 14) = (N - 23) + 370 + (N - 14) = \mathbf{2N} + \mathbf{333} \\
&(N \geq 370)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 380) &= B_{\bar{N}}(2N + 380 - B_{\bar{N}}(2N + 379)) + B_{\bar{N}}(2N + 380 - B_{\bar{N}}(2N + 378)) + B_{\bar{N}}(2N + 380 - B_{\bar{N}}(2N + 377)) \\
&= B_{\bar{N}}(2N + 380 - (2N + 333)) + B_{\bar{N}}(2N + 380 - (N + 402)) + B_{\bar{N}}(2N + 380 - (2N + 9)) \\
&= B_{\bar{N}}(47) + B_{\bar{N}}(N - 22) + B_{\bar{N}}(371) = 47 + (N - 22) + 371 = \mathbf{N} + \mathbf{396} \\
&(N \geq 371)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 381) &= B_{\bar{N}}(2N + 381 - B_{\bar{N}}(2N + 380)) + B_{\bar{N}}(2N + 381 - B_{\bar{N}}(2N + 379)) + B_{\bar{N}}(2N + 381 - B_{\bar{N}}(2N + 378)) \\
&= B_{\bar{N}}(2N + 381 - (N + 396)) + B_{\bar{N}}(2N + 381 - (2N + 333)) + B_{\bar{N}}(2N + 381 - (N + 402)) \\
&= B_{\bar{N}}(N - 15) + B_{\bar{N}}(48) + B_{\bar{N}}(N - 21) = (N - 15) + 48 + (N - 21) = \mathbf{2N} + \mathbf{12} \\
&(N \geq 48)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 382) &= B_{\bar{N}}(2N + 382 - B_{\bar{N}}(2N + 381)) + B_{\bar{N}}(2N + 382 - B_{\bar{N}}(2N + 380)) + B_{\bar{N}}(2N + 382 - B_{\bar{N}}(2N + 379)) \\
&= B_{\bar{N}}(2N + 382 - (2N + 12)) + B_{\bar{N}}(2N + 382 - (N + 396)) + B_{\bar{N}}(2N + 382 - (2N + 333)) \\
&= B_{\bar{N}}(370) + B_{\bar{N}}(N - 14) + B_{\bar{N}}(49) = 370 + (N - 14) + 49 = \mathbf{N} + \mathbf{405} \\
&(N \geq 370)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 383) &= B_{\bar{N}}(2N + 383 - B_{\bar{N}}(2N + 382)) + B_{\bar{N}}(2N + 383 - B_{\bar{N}}(2N + 381)) + B_{\bar{N}}(2N + 383 - B_{\bar{N}}(2N + 380)) \\
&= B_{\bar{N}}(2N + 383 - (N + 405)) + B_{\bar{N}}(2N + 383 - (2N + 12)) + B_{\bar{N}}(2N + 383 - (N + 396)) \\
&= B_{\bar{N}}(N - 22) + B_{\bar{N}}(371) + B_{\bar{N}}(N - 13) = (N - 22) + 371 + (N - 13) = \mathbf{2N} + \mathbf{336} \\
&(N \geq 371)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 384) &= B_{\bar{N}}(2N + 384 - B_{\bar{N}}(2N + 383)) + B_{\bar{N}}(2N + 384 - B_{\bar{N}}(2N + 382)) + B_{\bar{N}}(2N + 384 - B_{\bar{N}}(2N + 381)) \\
&= B_{\bar{N}}(2N + 384 - (2N + 336)) + B_{\bar{N}}(2N + 384 - (N + 405)) + B_{\bar{N}}(2N + 384 - (2N + 12)) \\
&= B_{\bar{N}}(48) + B_{\bar{N}}(N - 21) + B_{\bar{N}}(372) = 48 + (N - 21) + 372 = \mathbf{N} + \mathbf{399} \\
&(N \geq 372)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 385) &= B_{\bar{N}}(2N + 385 - B_{\bar{N}}(2N + 384)) + B_{\bar{N}}(2N + 385 - B_{\bar{N}}(2N + 383)) + B_{\bar{N}}(2N + 385 - B_{\bar{N}}(2N + 382)) \\
&= B_{\bar{N}}(2N + 385 - (N + 399)) + B_{\bar{N}}(2N + 385 - (2N + 336)) + B_{\bar{N}}(2N + 385 - (N + 405)) \\
&= B_{\bar{N}}(N - 14) + B_{\bar{N}}(49) + B_{\bar{N}}(N - 20) = (N - 14) + 49 + (N - 20) = \mathbf{2N} + \mathbf{15} \\
&(N \geq 49)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 386) &= B_{\bar{N}}(2N + 386 - B_{\bar{N}}(2N + 385)) + B_{\bar{N}}(2N + 386 - B_{\bar{N}}(2N + 384)) + B_{\bar{N}}(2N + 386 - B_{\bar{N}}(2N + 383)) \\
&= B_{\bar{N}}(2N + 386 - (2N + 15)) + B_{\bar{N}}(2N + 386 - (N + 399)) + B_{\bar{N}}(2N + 386 - (2N + 336)) \\
&= B_{\bar{N}}(371) + B_{\bar{N}}(N - 13) + B_{\bar{N}}(50) = 371 + (N - 13) + 50 = \mathbf{N} + \mathbf{408} \\
&(N \geq 371)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 387) &= B_{\bar{N}}(2N + 387 - B_{\bar{N}}(2N + 386)) + B_{\bar{N}}(2N + 387 - B_{\bar{N}}(2N + 385)) + B_{\bar{N}}(2N + 387 - B_{\bar{N}}(2N + 384)) \\
&= B_{\bar{N}}(2N + 387 - (N + 408)) + B_{\bar{N}}(2N + 387 - (2N + 15)) + B_{\bar{N}}(2N + 387 - (N + 399)) \\
&= B_{\bar{N}}(N - 21) + B_{\bar{N}}(372) + B_{\bar{N}}(N - 12) = (N - 21) + 372 + (N - 12) = \mathbf{2N} + \mathbf{339} \\
&(N \geq 372)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 388) &= B_{\bar{N}}(2N + 388 - B_{\bar{N}}(2N + 387)) + B_{\bar{N}}(2N + 388 - B_{\bar{N}}(2N + 386)) + B_{\bar{N}}(2N + 388 - B_{\bar{N}}(2N + 385)) \\
&= B_{\bar{N}}(2N + 388 - (2N + 339)) + B_{\bar{N}}(2N + 388 - (N + 408)) + B_{\bar{N}}(2N + 388 - (2N + 15)) \\
&= B_{\bar{N}}(49) + B_{\bar{N}}(N - 20) + B_{\bar{N}}(373) = 49 + (N - 20) + 373 = \mathbf{N} + \mathbf{402} \\
&(N \geq 373)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 389) &= B_{\bar{N}}(2N + 389 - B_{\bar{N}}(2N + 388)) + B_{\bar{N}}(2N + 389 - B_{\bar{N}}(2N + 387)) + B_{\bar{N}}(2N + 389 - B_{\bar{N}}(2N + 386)) \\
&= B_{\bar{N}}(2N + 389 - (N + 402)) + B_{\bar{N}}(2N + 389 - (2N + 339)) + B_{\bar{N}}(2N + 389 - (N + 408)) \\
&= B_{\bar{N}}(N - 13) + B_{\bar{N}}(50) + B_{\bar{N}}(N - 19) = (N - 13) + 50 + (N - 19) = \mathbf{2N} + \mathbf{18} \\
&(N \geq 50)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 390) &= B_{\bar{N}}(2N + 390 - B_{\bar{N}}(2N + 389)) + B_{\bar{N}}(2N + 390 - B_{\bar{N}}(2N + 388)) + B_{\bar{N}}(2N + 390 - B_{\bar{N}}(2N + 387)) \\
&= B_{\bar{N}}(2N + 390 - (2N + 18)) + B_{\bar{N}}(2N + 390 - (N + 402)) + B_{\bar{N}}(2N + 390 - (2N + 339)) \\
&= B_{\bar{N}}(372) + B_{\bar{N}}(N - 12) + B_{\bar{N}}(51) = 372 + (N - 12) + 51 = \mathbf{N} + \mathbf{411} \\
&(N \geq 372)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 391) &= B_{\bar{N}}(2N + 391 - B_{\bar{N}}(2N + 390)) + B_{\bar{N}}(2N + 391 - B_{\bar{N}}(2N + 389)) + B_{\bar{N}}(2N + 391 - B_{\bar{N}}(2N + 388)) \\
&= B_{\bar{N}}(2N + 391 - (N + 411)) + B_{\bar{N}}(2N + 391 - (2N + 18)) + B_{\bar{N}}(2N + 391 - (N + 402)) \\
&= B_{\bar{N}}(N - 20) + B_{\bar{N}}(373) + B_{\bar{N}}(N - 11) = (N - 20) + 373 + (N - 11) = \mathbf{2N} + \mathbf{342} \\
&(N \geq 383)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 392) &= B_{\bar{N}}(2N + 392 - B_{\bar{N}}(2N + 391)) + B_{\bar{N}}(2N + 392 - B_{\bar{N}}(2N + 390)) + B_{\bar{N}}(2N + 392 - B_{\bar{N}}(2N + 389)) \\
&= B_{\bar{N}}(2N + 392 - (2N + 342)) + B_{\bar{N}}(2N + 392 - (N + 411)) + B_{\bar{N}}(2N + 392 - (2N + 18)) \\
&= B_{\bar{N}}(50) + B_{\bar{N}}(N - 19) + B_{\bar{N}}(374) = 50 + (N - 19) + 374 = \mathbf{N} + \mathbf{405} \\
&(N \geq 384)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 393) &= B_{\bar{N}}(2N + 393 - B_{\bar{N}}(2N + 392)) + B_{\bar{N}}(2N + 393 - B_{\bar{N}}(2N + 391)) + B_{\bar{N}}(2N + 393 - B_{\bar{N}}(2N + 390)) \\
&= B_{\bar{N}}(2N + 393 - (N + 405)) + B_{\bar{N}}(2N + 393 - (2N + 342)) + B_{\bar{N}}(2N + 393 - (N + 411)) \\
&= B_{\bar{N}}(N - 12) + B_{\bar{N}}(51) + B_{\bar{N}}(N - 18) = (N - 12) + 51 + (N - 18) = \mathbf{2N} + \mathbf{21} \\
&(N \geq 385)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 394) &= B_{\bar{N}}(2N + 394 - B_{\bar{N}}(2N + 393)) + B_{\bar{N}}(2N + 394 - B_{\bar{N}}(2N + 392)) + B_{\bar{N}}(2N + 394 - B_{\bar{N}}(2N + 391)) \\
&= B_{\bar{N}}(2N + 394 - (2N + 21)) + B_{\bar{N}}(2N + 394 - (N + 405)) + B_{\bar{N}}(2N + 394 - (2N + 342)) \\
&= B_{\bar{N}}(373) + B_{\bar{N}}(N - 11) + B_{\bar{N}}(52) = 373 + (N - 11) + 52 = \mathbf{N} + \mathbf{414} \\
&(N \geq 373)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 395) &= B_{\bar{N}}(2N + 395 - B_{\bar{N}}(2N + 394)) + B_{\bar{N}}(2N + 395 - B_{\bar{N}}(2N + 393)) + B_{\bar{N}}(2N + 395 - B_{\bar{N}}(2N + 392)) \\
&= B_{\bar{N}}(2N + 395 - (N + 414)) + B_{\bar{N}}(2N + 395 - (2N + 21)) + B_{\bar{N}}(2N + 395 - (N + 405)) \\
&= B_{\bar{N}}(N - 19) + B_{\bar{N}}(374) + B_{\bar{N}}(N - 10) = (N - 19) + 374 + (N - 10) = \mathbf{2N} + \mathbf{345} \\
&(N \geq 743)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 396) &= B_{\bar{N}}(2N + 396 - B_{\bar{N}}(2N + 395)) + B_{\bar{N}}(2N + 396 - B_{\bar{N}}(2N + 394)) + B_{\bar{N}}(2N + 396 - B_{\bar{N}}(2N + 393)) \\
&= B_{\bar{N}}(2N + 396 - (2N + 345)) + B_{\bar{N}}(2N + 396 - (N + 414)) + B_{\bar{N}}(2N + 396 - (2N + 21)) \\
&= B_{\bar{N}}(51) + B_{\bar{N}}(N - 18) + B_{\bar{N}}(375) = 51 + (N - 18) + 375 = \mathbf{N} + \mathbf{408} \\
&(N \geq 773)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 397) &= B_{\bar{N}}(2N + 397 - B_{\bar{N}}(2N + 396)) + B_{\bar{N}}(2N + 397 - B_{\bar{N}}(2N + 395)) + B_{\bar{N}}(2N + 397 - B_{\bar{N}}(2N + 394)) \\
&= B_{\bar{N}}(2N + 397 - (N + 408)) + B_{\bar{N}}(2N + 397 - (2N + 345)) + B_{\bar{N}}(2N + 397 - (N + 414)) \\
&= B_{\bar{N}}(N - 11) + B_{\bar{N}}(52) + B_{\bar{N}}(N - 17) = (N - 11) + 52 + (N - 17) = \mathbf{2N} + \mathbf{24} \\
&(N \geq 772)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 398) &= B_{\bar{N}}(2N + 398 - B_{\bar{N}}(2N + 397)) + B_{\bar{N}}(2N + 398 - B_{\bar{N}}(2N + 396)) + B_{\bar{N}}(2N + 398 - B_{\bar{N}}(2N + 395)) \\
&= B_{\bar{N}}(2N + 398 - (2N + 24)) + B_{\bar{N}}(2N + 398 - (N + 408)) + B_{\bar{N}}(2N + 398 - (2N + 345)) \\
&= B_{\bar{N}}(374) + B_{\bar{N}}(N - 10) + B_{\bar{N}}(53) = 374 + (N - 10) + 53 = \mathbf{N} + \mathbf{417} \\
&(N \geq 771)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 399) &= B_{\bar{N}}(2N + 399 - B_{\bar{N}}(2N + 398)) + B_{\bar{N}}(2N + 399 - B_{\bar{N}}(2N + 397)) + B_{\bar{N}}(2N + 399 - B_{\bar{N}}(2N + 396)) \\
&= B_{\bar{N}}(2N + 399 - (N + 417)) + B_{\bar{N}}(2N + 399 - (2N + 24)) + B_{\bar{N}}(2N + 399 - (N + 408)) \\
&= B_{\bar{N}}(N - 18) + B_{\bar{N}}(375) + B_{\bar{N}}(N - 9) = (N - 18) + 375 + (N - 9) = \mathbf{2N} + \mathbf{348} \\
&(N \geq 1067)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 400) &= B_{\bar{N}}(2N + 400 - B_{\bar{N}}(2N + 399)) + B_{\bar{N}}(2N + 400 - B_{\bar{N}}(2N + 398)) + B_{\bar{N}}(2N + 400 - B_{\bar{N}}(2N + 397)) \\
&= B_{\bar{N}}(2N + 400 - (2N + 348)) + B_{\bar{N}}(2N + 400 - (N + 417)) + B_{\bar{N}}(2N + 400 - (2N + 24)) \\
&= B_{\bar{N}}(52) + B_{\bar{N}}(N - 17) + B_{\bar{N}}(376) = 52 + (N - 17) + 376 = \mathbf{N} + \mathbf{411} \\
&(N \geq 1068)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 401) &= B_{\bar{N}}(2N + 401 - B_{\bar{N}}(2N + 400)) + B_{\bar{N}}(2N + 401 - B_{\bar{N}}(2N + 399)) + B_{\bar{N}}(2N + 401 - B_{\bar{N}}(2N + 398)) \\
&= B_{\bar{N}}(2N + 401 - (N + 411)) + B_{\bar{N}}(2N + 401 - (2N + 348)) + B_{\bar{N}}(2N + 401 - (N + 417)) \\
&= B_{\bar{N}}(N - 10) + B_{\bar{N}}(53) + B_{\bar{N}}(N - 16) = (N - 10) + 53 + (N - 16) = \mathbf{2N} + \mathbf{27} \\
&(N \geq 1069)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 402) &= B_{\bar{N}}(2N + 402 - B_{\bar{N}}(2N + 401)) + B_{\bar{N}}(2N + 402 - B_{\bar{N}}(2N + 400)) + B_{\bar{N}}(2N + 402 - B_{\bar{N}}(2N + 399)) \\
&= B_{\bar{N}}(2N + 402 - (2N + 27)) + B_{\bar{N}}(2N + 402 - (N + 411)) + B_{\bar{N}}(2N + 402 - (2N + 348)) \\
&= B_{\bar{N}}(375) + B_{\bar{N}}(N - 9) + B_{\bar{N}}(54) = 375 + (N - 9) + 54 = \mathbf{N} + \mathbf{420} \\
&(N \geq 375)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 403) &= B_{\bar{N}}(2N + 403 - B_{\bar{N}}(2N + 402)) + B_{\bar{N}}(2N + 403 - B_{\bar{N}}(2N + 401)) + B_{\bar{N}}(2N + 403 - B_{\bar{N}}(2N + 400)) \\
&= B_{\bar{N}}(2N + 403 - (N + 420)) + B_{\bar{N}}(2N + 403 - (2N + 27)) + B_{\bar{N}}(2N + 403 - (N + 411)) \\
&= B_{\bar{N}}(N - 17) + B_{\bar{N}}(376) + B_{\bar{N}}(N - 8) = (N - 17) + 376 + (N - 8) = \mathbf{2N} + \mathbf{351} \\
&(N \geq 1186)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 404) &= B_{\bar{N}}(2N + 404 - B_{\bar{N}}(2N + 403)) + B_{\bar{N}}(2N + 404 - B_{\bar{N}}(2N + 402)) + B_{\bar{N}}(2N + 404 - B_{\bar{N}}(2N + 401)) \\
&= B_{\bar{N}}(2N + 404 - (2N + 351)) + B_{\bar{N}}(2N + 404 - (N + 420)) + B_{\bar{N}}(2N + 404 - (2N + 27)) \\
&= B_{\bar{N}}(53) + B_{\bar{N}}(N - 16) + B_{\bar{N}}(377) = 53 + (N - 16) + 377 = \mathbf{N} + \mathbf{414} \\
&(N \geq 1185)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 405) &= B_{\bar{N}}(2N + 405 - B_{\bar{N}}(2N + 404)) + B_{\bar{N}}(2N + 405 - B_{\bar{N}}(2N + 403)) + B_{\bar{N}}(2N + 405 - B_{\bar{N}}(2N + 402)) \\
&= B_{\bar{N}}(2N + 405 - (N + 414)) + B_{\bar{N}}(2N + 405 - (2N + 351)) + B_{\bar{N}}(2N + 405 - (N + 420)) \\
&= B_{\bar{N}}(N - 9) + B_{\bar{N}}(54) + B_{\bar{N}}(N - 15) = (N - 9) + 54 + (N - 15) = \mathbf{2N} + \mathbf{30} \\
&(N \geq 1184)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 406) &= B_{\bar{N}}(2N + 406 - B_{\bar{N}}(2N + 405)) + B_{\bar{N}}(2N + 406 - B_{\bar{N}}(2N + 404)) + B_{\bar{N}}(2N + 406 - B_{\bar{N}}(2N + 403)) \\
&= B_{\bar{N}}(2N + 406 - (2N + 30)) + B_{\bar{N}}(2N + 406 - (N + 414)) + B_{\bar{N}}(2N + 406 - (2N + 351)) \\
&= B_{\bar{N}}(376) + B_{\bar{N}}(N - 8) + B_{\bar{N}}(55) = 376 + (N - 8) + 55 = \mathbf{N} + \mathbf{423} \\
&(N \geq 511)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 407) &= B_{\bar{N}}(2N + 407 - B_{\bar{N}}(2N + 406)) + B_{\bar{N}}(2N + 407 - B_{\bar{N}}(2N + 405)) + B_{\bar{N}}(2N + 407 - B_{\bar{N}}(2N + 404)) \\
&= B_{\bar{N}}(2N + 407 - (N + 423)) + B_{\bar{N}}(2N + 407 - (2N + 30)) + B_{\bar{N}}(2N + 407 - (N + 414)) \\
&= B_{\bar{N}}(N - 16) + B_{\bar{N}}(377) + B_{\bar{N}}(N - 7) = (N - 16) + 377 + (N - 7) = \mathbf{2N} + \mathbf{354} \\
&(N \geq 512)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 408) &= B_{\bar{N}}(2N + 408 - B_{\bar{N}}(2N + 407)) + B_{\bar{N}}(2N + 408 - B_{\bar{N}}(2N + 406)) + B_{\bar{N}}(2N + 408 - B_{\bar{N}}(2N + 405)) \\
&= B_{\bar{N}}(2N + 408 - (2N + 354)) + B_{\bar{N}}(2N + 408 - (N + 423)) + B_{\bar{N}}(2N + 408 - (2N + 30)) \\
&= B_{\bar{N}}(54) + B_{\bar{N}}(N - 15) + B_{\bar{N}}(378) = 54 + (N - 15) + 378 = \mathbf{N} + \mathbf{417} \\
&(N \geq 513)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 409) &= B_{\bar{N}}(2N + 409 - B_{\bar{N}}(2N + 408)) + B_{\bar{N}}(2N + 409 - B_{\bar{N}}(2N + 407)) + B_{\bar{N}}(2N + 409 - B_{\bar{N}}(2N + 406)) \\
&= B_{\bar{N}}(2N + 409 - (N + 417)) + B_{\bar{N}}(2N + 409 - (2N + 354)) + B_{\bar{N}}(2N + 409 - (N + 423)) \\
&= B_{\bar{N}}(N - 8) + B_{\bar{N}}(55) + B_{\bar{N}}(N - 14) = (N - 8) + 55 + (N - 14) = \mathbf{2N} + \mathbf{33} \\
&(N \geq 55)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 410) &= B_{\bar{N}}(2N + 410 - B_{\bar{N}}(2N + 409)) + B_{\bar{N}}(2N + 410 - B_{\bar{N}}(2N + 408)) + B_{\bar{N}}(2N + 410 - B_{\bar{N}}(2N + 407)) \\
&= B_{\bar{N}}(2N + 410 - (2N + 33)) + B_{\bar{N}}(2N + 410 - (N + 417)) + B_{\bar{N}}(2N + 410 - (2N + 354)) \\
&= B_{\bar{N}}(377) + B_{\bar{N}}(N - 7) + B_{\bar{N}}(56) = 377 + (N - 7) + 56 = \mathbf{N} + \mathbf{426} \\
&(N \geq 377)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 411) &= B_{\bar{N}}(2N + 411 - B_{\bar{N}}(2N + 410)) + B_{\bar{N}}(2N + 411 - B_{\bar{N}}(2N + 409)) + B_{\bar{N}}(2N + 411 - B_{\bar{N}}(2N + 408)) \\
&= B_{\bar{N}}(2N + 411 - (N + 426)) + B_{\bar{N}}(2N + 411 - (2N + 33)) + B_{\bar{N}}(2N + 411 - (N + 417)) \\
&= B_{\bar{N}}(N - 15) + B_{\bar{N}}(378) + B_{\bar{N}}(N - 6) = (N - 15) + 378 + (N - 6) = \mathbf{2N} + \mathbf{357} \\
&(N \geq 378)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 412) &= B_{\bar{N}}(2N + 412 - B_{\bar{N}}(2N + 411)) + B_{\bar{N}}(2N + 412 - B_{\bar{N}}(2N + 410)) + B_{\bar{N}}(2N + 412 - B_{\bar{N}}(2N + 409)) \\
&= B_{\bar{N}}(2N + 412 - (2N + 357)) + B_{\bar{N}}(2N + 412 - (N + 426)) + B_{\bar{N}}(2N + 412 - (2N + 33)) \\
&= B_{\bar{N}}(55) + B_{\bar{N}}(N - 14) + B_{\bar{N}}(379) = 55 + (N - 14) + 379 = \mathbf{N} + \mathbf{420} \\
&(N \geq 379)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 413) &= B_{\bar{N}}(2N + 413 - B_{\bar{N}}(2N + 412)) + B_{\bar{N}}(2N + 413 - B_{\bar{N}}(2N + 411)) + B_{\bar{N}}(2N + 413 - B_{\bar{N}}(2N + 410)) \\
&= B_{\bar{N}}(2N + 413 - (N + 420)) + B_{\bar{N}}(2N + 413 - (2N + 357)) + B_{\bar{N}}(2N + 413 - (N + 426)) \\
&= B_{\bar{N}}(N - 7) + B_{\bar{N}}(56) + B_{\bar{N}}(N - 13) = (N - 7) + 56 + (N - 13) = \mathbf{2N} + \mathbf{36} \\
&(N \geq 56)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 414) &= B_{\bar{N}}(2N + 414 - B_{\bar{N}}(2N + 413)) + B_{\bar{N}}(2N + 414 - B_{\bar{N}}(2N + 412)) + B_{\bar{N}}(2N + 414 - B_{\bar{N}}(2N + 411)) \\
&= B_{\bar{N}}(2N + 414 - (2N + 36)) + B_{\bar{N}}(2N + 414 - (N + 420)) + B_{\bar{N}}(2N + 414 - (2N + 357)) \\
&= B_{\bar{N}}(378) + B_{\bar{N}}(N - 6) + B_{\bar{N}}(57) = 378 + (N - 6) + 57 = \mathbf{N} + \mathbf{429} \\
&(N \geq 378)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 415) &= B_{\bar{N}}(2N + 415 - B_{\bar{N}}(2N + 414)) + B_{\bar{N}}(2N + 415 - B_{\bar{N}}(2N + 413)) + B_{\bar{N}}(2N + 415 - B_{\bar{N}}(2N + 412)) \\
&= B_{\bar{N}}(2N + 415 - (N + 429)) + B_{\bar{N}}(2N + 415 - (2N + 36)) + B_{\bar{N}}(2N + 415 - (N + 420)) \\
&= B_{\bar{N}}(N - 14) + B_{\bar{N}}(379) + B_{\bar{N}}(N - 5) = (N - 14) + 379 + (N - 5) = \mathbf{2N} + \mathbf{360} \\
&(N \geq 379)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 416) &= B_{\bar{N}}(2N + 416 - B_{\bar{N}}(2N + 415)) + B_{\bar{N}}(2N + 416 - B_{\bar{N}}(2N + 414)) + B_{\bar{N}}(2N + 416 - B_{\bar{N}}(2N + 413)) \\
&= B_{\bar{N}}(2N + 416 - (2N + 360)) + B_{\bar{N}}(2N + 416 - (N + 429)) + B_{\bar{N}}(2N + 416 - (2N + 36)) \\
&= B_{\bar{N}}(56) + B_{\bar{N}}(N - 13) + B_{\bar{N}}(380) = 56 + (N - 13) + 380 = \mathbf{N} + \mathbf{423} \\
&(N \geq 380)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 417) &= B_{\bar{N}}(2N + 417 - B_{\bar{N}}(2N + 416)) + B_{\bar{N}}(2N + 417 - B_{\bar{N}}(2N + 415)) + B_{\bar{N}}(2N + 417 - B_{\bar{N}}(2N + 414)) \\
&= B_{\bar{N}}(2N + 417 - (N + 423)) + B_{\bar{N}}(2N + 417 - (2N + 360)) + B_{\bar{N}}(2N + 417 - (N + 429)) \\
&= B_{\bar{N}}(N - 6) + B_{\bar{N}}(57) + B_{\bar{N}}(N - 12) = (N - 6) + 57 + (N - 12) = \mathbf{2N} + \mathbf{39} \\
&(N \geq 366)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 418) &= B_{\bar{N}}(2N + 418 - B_{\bar{N}}(2N + 417)) + B_{\bar{N}}(2N + 418 - B_{\bar{N}}(2N + 416)) + B_{\bar{N}}(2N + 418 - B_{\bar{N}}(2N + 415)) \\
&= B_{\bar{N}}(2N + 418 - (2N + 39)) + B_{\bar{N}}(2N + 418 - (N + 423)) + B_{\bar{N}}(2N + 418 - (2N + 360)) \\
&= B_{\bar{N}}(379) + B_{\bar{N}}(N - 5) + B_{\bar{N}}(58) = 379 + (N - 5) + 58 = \mathbf{N} + \mathbf{432} \\
&(N \geq 379)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 419) &= B_{\bar{N}}(2N + 419 - B_{\bar{N}}(2N + 418)) + B_{\bar{N}}(2N + 419 - B_{\bar{N}}(2N + 417)) + B_{\bar{N}}(2N + 419 - B_{\bar{N}}(2N + 416)) \\
&= B_{\bar{N}}(2N + 419 - (N + 432)) + B_{\bar{N}}(2N + 419 - (2N + 39)) + B_{\bar{N}}(2N + 419 - (N + 423)) \\
&= B_{\bar{N}}(N - 13) + B_{\bar{N}}(380) + B_{\bar{N}}(N - 4) = (N - 13) + 380 + (N - 4) = \mathbf{2N} + \mathbf{363} \\
&(N \geq 380)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 420) &= B_{\bar{N}}(2N + 420 - B_{\bar{N}}(2N + 419)) + B_{\bar{N}}(2N + 420 - B_{\bar{N}}(2N + 418)) + B_{\bar{N}}(2N + 420 - B_{\bar{N}}(2N + 417)) \\
&= B_{\bar{N}}(2N + 420 - (2N + 363)) + B_{\bar{N}}(2N + 420 - (N + 432)) + B_{\bar{N}}(2N + 420 - (2N + 39)) \\
&= B_{\bar{N}}(57) + B_{\bar{N}}(N - 12) + B_{\bar{N}}(381) = 57 + (N - 12) + 381 = \mathbf{N} + \mathbf{426} \\
&(N \geq 381)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 421) &= B_{\bar{N}}(2N + 421 - B_{\bar{N}}(2N + 420)) + B_{\bar{N}}(2N + 421 - B_{\bar{N}}(2N + 419)) + B_{\bar{N}}(2N + 421 - B_{\bar{N}}(2N + 418)) \\
&= B_{\bar{N}}(2N + 421 - (N + 426)) + B_{\bar{N}}(2N + 421 - (2N + 363)) + B_{\bar{N}}(2N + 421 - (N + 432)) \\
&= B_{\bar{N}}(N - 5) + B_{\bar{N}}(58) + B_{\bar{N}}(N - 11) = (N - 5) + 58 + (N - 11) = \mathbf{2N} + \mathbf{42} \\
&(N \geq 361)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 422) &= B_{\bar{N}}(2N + 422 - B_{\bar{N}}(2N + 421)) + B_{\bar{N}}(2N + 422 - B_{\bar{N}}(2N + 420)) + B_{\bar{N}}(2N + 422 - B_{\bar{N}}(2N + 419)) \\
&= B_{\bar{N}}(2N + 422 - (2N + 42)) + B_{\bar{N}}(2N + 422 - (N + 426)) + B_{\bar{N}}(2N + 422 - (2N + 363)) \\
&= B_{\bar{N}}(380) + B_{\bar{N}}(N - 4) + B_{\bar{N}}(59) = 380 + (N - 4) + 59 = \mathbf{N} + \mathbf{435} \\
&(N \geq 380)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 423) &= B_{\bar{N}}(2N + 423 - B_{\bar{N}}(2N + 422)) + B_{\bar{N}}(2N + 423 - B_{\bar{N}}(2N + 421)) + B_{\bar{N}}(2N + 423 - B_{\bar{N}}(2N + 420)) \\
&= B_{\bar{N}}(2N + 423 - (N + 435)) + B_{\bar{N}}(2N + 423 - (2N + 42)) + B_{\bar{N}}(2N + 423 - (N + 426)) \\
&= B_{\bar{N}}(N - 12) + B_{\bar{N}}(381) + B_{\bar{N}}(N - 3) = (N - 12) + 381 + (N - 3) = \mathbf{2N} + \mathbf{366} \\
&(N \geq 381)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 424) &= B_{\bar{N}}(2N + 424 - B_{\bar{N}}(2N + 423)) + B_{\bar{N}}(2N + 424 - B_{\bar{N}}(2N + 422)) + B_{\bar{N}}(2N + 424 - B_{\bar{N}}(2N + 421)) \\
&= B_{\bar{N}}(2N + 424 - (2N + 366)) + B_{\bar{N}}(2N + 424 - (N + 435)) + B_{\bar{N}}(2N + 424 - (2N + 42)) \\
&= B_{\bar{N}}(58) + B_{\bar{N}}(N - 11) + B_{\bar{N}}(382) = 58 + (N - 11) + 382 = \mathbf{N} + \mathbf{429} \\
&(N \geq 382)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 425) &= B_{\bar{N}}(2N + 425 - B_{\bar{N}}(2N + 424)) + B_{\bar{N}}(2N + 425 - B_{\bar{N}}(2N + 423)) + B_{\bar{N}}(2N + 425 - B_{\bar{N}}(2N + 422)) \\
&= B_{\bar{N}}(2N + 425 - (N + 429)) + B_{\bar{N}}(2N + 425 - (2N + 366)) + B_{\bar{N}}(2N + 425 - (N + 435)) \\
&= B_{\bar{N}}(N - 4) + B_{\bar{N}}(59) + B_{\bar{N}}(N - 10) = (N - 4) + 59 + (N - 10) = \mathbf{2N} + \mathbf{45} \\
&(N \geq 106)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 426) &= B_{\bar{N}}(2N + 426 - B_{\bar{N}}(2N + 425)) + B_{\bar{N}}(2N + 426 - B_{\bar{N}}(2N + 424)) + B_{\bar{N}}(2N + 426 - B_{\bar{N}}(2N + 423)) \\
&= B_{\bar{N}}(2N + 426 - (2N + 45)) + B_{\bar{N}}(2N + 426 - (N + 429)) + B_{\bar{N}}(2N + 426 - (2N + 366)) \\
&= B_{\bar{N}}(381) + B_{\bar{N}}(N - 3) + B_{\bar{N}}(60) = 381 + (N - 3) + 60 = \mathbf{N} + \mathbf{438} \\
&(N \geq 381)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 427) &= B_{\bar{N}}(2N + 427 - B_{\bar{N}}(2N + 426)) + B_{\bar{N}}(2N + 427 - B_{\bar{N}}(2N + 425)) + B_{\bar{N}}(2N + 427 - B_{\bar{N}}(2N + 424)) \\
&= B_{\bar{N}}(2N + 427 - (N + 438)) + B_{\bar{N}}(2N + 427 - (2N + 45)) + B_{\bar{N}}(2N + 427 - (N + 429)) \\
&= B_{\bar{N}}(N - 11) + B_{\bar{N}}(382) + B_{\bar{N}}(N - 2) = (N - 11) + 382 + (N - 2) = \mathbf{2N} + \mathbf{369} \\
&(N \geq 382)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 428) &= B_{\bar{N}}(2N + 428 - B_{\bar{N}}(2N + 427)) + B_{\bar{N}}(2N + 428 - B_{\bar{N}}(2N + 426)) + B_{\bar{N}}(2N + 428 - B_{\bar{N}}(2N + 425)) \\
&= B_{\bar{N}}(2N + 428 - (2N + 369)) + B_{\bar{N}}(2N + 428 - (N + 438)) + B_{\bar{N}}(2N + 428 - (2N + 45)) \\
&= B_{\bar{N}}(59) + B_{\bar{N}}(N - 10) + B_{\bar{N}}(383) = 59 + (N - 10) + 383 = \mathbf{N} + 432 \\
&(N \geq 383)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 429) &= B_{\bar{N}}(2N + 429 - B_{\bar{N}}(2N + 428)) + B_{\bar{N}}(2N + 429 - B_{\bar{N}}(2N + 427)) + B_{\bar{N}}(2N + 429 - B_{\bar{N}}(2N + 426)) \\
&= B_{\bar{N}}(2N + 429 - (N + 432)) + B_{\bar{N}}(2N + 429 - (2N + 369)) + B_{\bar{N}}(2N + 429 - (N + 438)) \\
&= B_{\bar{N}}(N - 3) + B_{\bar{N}}(60) + B_{\bar{N}}(N - 9) = (N - 3) + 60 + (N - 9) = 2\mathbf{N} + 48 \\
&(N \geq 60)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 430) &= B_{\bar{N}}(2N + 430 - B_{\bar{N}}(2N + 429)) + B_{\bar{N}}(2N + 430 - B_{\bar{N}}(2N + 428)) + B_{\bar{N}}(2N + 430 - B_{\bar{N}}(2N + 427)) \\
&= B_{\bar{N}}(2N + 430 - (2N + 48)) + B_{\bar{N}}(2N + 430 - (N + 432)) + B_{\bar{N}}(2N + 430 - (2N + 369)) \\
&= B_{\bar{N}}(382) + B_{\bar{N}}(N - 2) + B_{\bar{N}}(61) = 382 + (N - 2) + 61 = \mathbf{N} + 441 \\
&(N \geq 382)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 431) &= B_{\bar{N}}(2N + 431 - B_{\bar{N}}(2N + 430)) + B_{\bar{N}}(2N + 431 - B_{\bar{N}}(2N + 429)) + B_{\bar{N}}(2N + 431 - B_{\bar{N}}(2N + 428)) \\
&= B_{\bar{N}}(2N + 431 - (N + 441)) + B_{\bar{N}}(2N + 431 - (2N + 48)) + B_{\bar{N}}(2N + 431 - (N + 432)) \\
&= B_{\bar{N}}(N - 10) + B_{\bar{N}}(383) + B_{\bar{N}}(N - 1) = (N - 10) + 383 + (N - 1) = 2\mathbf{N} + 372 \\
&(N \geq 383)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 432) &= B_{\bar{N}}(2N + 432 - B_{\bar{N}}(2N + 431)) + B_{\bar{N}}(2N + 432 - B_{\bar{N}}(2N + 430)) + B_{\bar{N}}(2N + 432 - B_{\bar{N}}(2N + 429)) \\
&= B_{\bar{N}}(2N + 432 - (2N + 372)) + B_{\bar{N}}(2N + 432 - (N + 441)) + B_{\bar{N}}(2N + 432 - (2N + 48)) \\
&= B_{\bar{N}}(60) + B_{\bar{N}}(N - 9) + B_{\bar{N}}(384) = 60 + (N - 9) + 384 = \mathbf{N} + 435 \\
&(N \geq 384)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 433) &= B_{\bar{N}}(2N + 433 - B_{\bar{N}}(2N + 432)) + B_{\bar{N}}(2N + 433 - B_{\bar{N}}(2N + 431)) + B_{\bar{N}}(2N + 433 - B_{\bar{N}}(2N + 430)) \\
&= B_{\bar{N}}(2N + 433 - (N + 435)) + B_{\bar{N}}(2N + 433 - (2N + 372)) + B_{\bar{N}}(2N + 433 - (N + 441)) \\
&= B_{\bar{N}}(N - 2) + B_{\bar{N}}(61) + B_{\bar{N}}(N - 8) = (N - 2) + 61 + (N - 8) = \mathbf{2N} + \mathbf{51} \\
&(N \geq 259)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 434) &= B_{\bar{N}}(2N + 434 - B_{\bar{N}}(2N + 433)) + B_{\bar{N}}(2N + 434 - B_{\bar{N}}(2N + 432)) + B_{\bar{N}}(2N + 434 - B_{\bar{N}}(2N + 431)) \\
&= B_{\bar{N}}(2N + 434 - (2N + 51)) + B_{\bar{N}}(2N + 434 - (N + 435)) + B_{\bar{N}}(2N + 434 - (2N + 372)) \\
&= B_{\bar{N}}(383) + B_{\bar{N}}(N - 1) + B_{\bar{N}}(62) = 383 + (N - 1) + 62 = \mathbf{N} + \mathbf{444} \\
&(N \geq 383)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 435) &= B_{\bar{N}}(2N + 435 - B_{\bar{N}}(2N + 434)) + B_{\bar{N}}(2N + 435 - B_{\bar{N}}(2N + 433)) + B_{\bar{N}}(2N + 435 - B_{\bar{N}}(2N + 432)) \\
&= B_{\bar{N}}(2N + 435 - (N + 444)) + B_{\bar{N}}(2N + 435 - (2N + 51)) + B_{\bar{N}}(2N + 435 - (N + 435)) \\
&= B_{\bar{N}}(N - 9) + B_{\bar{N}}(384) + B_{\bar{N}}(N) = (N - 9) + 384 + N = \mathbf{2N} + \mathbf{375} \\
&(N \geq 384)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 436) &= B_{\bar{N}}(2N + 436 - B_{\bar{N}}(2N + 435)) + B_{\bar{N}}(2N + 436 - B_{\bar{N}}(2N + 434)) + B_{\bar{N}}(2N + 436 - B_{\bar{N}}(2N + 433)) \\
&= B_{\bar{N}}(2N + 436 - (2N + 375)) + B_{\bar{N}}(2N + 436 - (N + 444)) + B_{\bar{N}}(2N + 436 - (2N + 51)) \\
&= B_{\bar{N}}(61) + B_{\bar{N}}(N - 8) + B_{\bar{N}}(385) = 61 + (N - 8) + 385 = \mathbf{N} + \mathbf{438} \\
&(N \geq 385)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 437) &= B_{\bar{N}}(2N + 437 - B_{\bar{N}}(2N + 436)) + B_{\bar{N}}(2N + 437 - B_{\bar{N}}(2N + 435)) + B_{\bar{N}}(2N + 437 - B_{\bar{N}}(2N + 434)) \\
&= B_{\bar{N}}(2N + 437 - (N + 438)) + B_{\bar{N}}(2N + 437 - (2N + 375)) + B_{\bar{N}}(2N + 437 - (N + 444)) \\
&= B_{\bar{N}}(N - 1) + B_{\bar{N}}(62) + B_{\bar{N}}(N - 7) = (N - 1) + 62 + (N - 7) = \mathbf{2N} + \mathbf{54} \\
&(N \geq 310)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 438) &= B_{\bar{N}}(2N + 438 - B_{\bar{N}}(2N + 437)) + B_{\bar{N}}(2N + 438 - B_{\bar{N}}(2N + 436)) + B_{\bar{N}}(2N + 438 - B_{\bar{N}}(2N + 435)) \\
&= B_{\bar{N}}(2N + 438 - (2N + 54)) + B_{\bar{N}}(2N + 438 - (N + 438)) + B_{\bar{N}}(2N + 438 - (2N + 375)) \\
&= B_{\bar{N}}(384) + B_{\bar{N}}(N) + B_{\bar{N}}(63) = 384 + N + 63 = \mathbf{N} + \mathbf{447} \\
&(N \geq 384)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 439) &= B_{\bar{N}}(2N + 439 - B_{\bar{N}}(2N + 438)) + B_{\bar{N}}(2N + 439 - B_{\bar{N}}(2N + 437)) + B_{\bar{N}}(2N + 439 - B_{\bar{N}}(2N + 436)) \\
&= B_{\bar{N}}(2N + 439 - (N + 447)) + B_{\bar{N}}(2N + 439 - (2N + 54)) + B_{\bar{N}}(2N + 439 - (N + 438)) \\
&= B_{\bar{N}}(N - 8) + B_{\bar{N}}(385) + B_{\bar{N}}(N + 1) = (N - 8) + 385 + 6 = \mathbf{N} + \mathbf{383} \\
&(N \geq 385)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 440) &= B_{\bar{N}}(2N + 440 - B_{\bar{N}}(2N + 439)) + B_{\bar{N}}(2N + 440 - B_{\bar{N}}(2N + 438)) + B_{\bar{N}}(2N + 440 - B_{\bar{N}}(2N + 437)) \\
&= B_{\bar{N}}(2N + 440 - (N + 383)) + B_{\bar{N}}(2N + 440 - (N + 447)) + B_{\bar{N}}(2N + 440 - (2N + 54)) \\
&= B_{\bar{N}}(N + 57) + B_{\bar{N}}(N - 7) + B_{\bar{N}}(386) = (N + 49) + (N - 7) + 386 = \mathbf{2N} + \mathbf{428} \\
&(N \geq 386)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 441) &= B_{\bar{N}}(2N + 441 - B_{\bar{N}}(2N + 440)) + B_{\bar{N}}(2N + 441 - B_{\bar{N}}(2N + 439)) + B_{\bar{N}}(2N + 441 - B_{\bar{N}}(2N + 438)) \\
&= B_{\bar{N}}(2N + 441 - (2N + 428)) + B_{\bar{N}}(2N + 441 - (N + 383)) + B_{\bar{N}}(2N + 441 - (N + 447)) \\
&= B_{\bar{N}}(13) + B_{\bar{N}}(N + 58) + B_{\bar{N}}(N - 6) = 13 + (N + 60) + (N - 6) = \mathbf{2N} + \mathbf{67} \\
&(N \geq 13)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 442) &= B_{\bar{N}}(2N + 442 - B_{\bar{N}}(2N + 441)) + B_{\bar{N}}(2N + 442 - B_{\bar{N}}(2N + 440)) + B_{\bar{N}}(2N + 442 - B_{\bar{N}}(2N + 439)) \\
&= B_{\bar{N}}(2N + 442 - (2N + 67)) + B_{\bar{N}}(2N + 442 - (2N + 428)) + B_{\bar{N}}(2N + 442 - (N + 383)) \\
&= B_{\bar{N}}(375) + B_{\bar{N}}(14) + B_{\bar{N}}(N + 59) = 375 + 14 + 25 = \mathbf{414} \\
&(N \geq 375)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 443) &= B_{\bar{N}}(2N + 443 - B_{\bar{N}}(2N + 442)) + B_{\bar{N}}(2N + 443 - B_{\bar{N}}(2N + 441)) + B_{\bar{N}}(2N + 443 - B_{\bar{N}}(2N + 440)) \\
&= B_{\bar{N}}(2N + 443 - 414) + B_{\bar{N}}(2N + 443 - (2N + 67)) + B_{\bar{N}}(2N + 443 - (2N + 428)) \\
&= B_{\bar{N}}(2N + 29) + B_{\bar{N}}(376) + B_{\bar{N}}(15) = (2N + 27) + 376 + 15 = \mathbf{2N} + \mathbf{418} \\
&(N \geq 398)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 444) &= B_{\bar{N}}(2N + 444 - B_{\bar{N}}(2N + 443)) + B_{\bar{N}}(2N + 444 - B_{\bar{N}}(2N + 442)) + B_{\bar{N}}(2N + 444 - B_{\bar{N}}(2N + 441)) \\
&= B_{\bar{N}}(2N + 444 - (2N + 418)) + B_{\bar{N}}(2N + 444 - 414) + B_{\bar{N}}(2N + 444 - (2N + 67)) \\
&= B_{\bar{N}}(26) + B_{\bar{N}}(2N + 30) + B_{\bar{N}}(377) = 26 + (2N + 10) + 377 = \mathbf{2N} + \mathbf{413} \\
&(N \geq 399)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 445) &= B_{\bar{N}}(2N + 445 - B_{\bar{N}}(2N + 444)) + B_{\bar{N}}(2N + 445 - B_{\bar{N}}(2N + 443)) + B_{\bar{N}}(2N + 445 - B_{\bar{N}}(2N + 442)) \\
&= B_{\bar{N}}(2N + 445 - (2N + 413)) + B_{\bar{N}}(2N + 445 - (2N + 418)) + B_{\bar{N}}(2N + 445 - 414) \\
&= B_{\bar{N}}(32) + B_{\bar{N}}(27) + B_{\bar{N}}(2N + 31) = 32 + 27 + (2N + 24) = \mathbf{2N} + \mathbf{83} \\
&(N \geq 400)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 446) &= B_{\bar{N}}(2N + 446 - B_{\bar{N}}(2N + 445)) + B_{\bar{N}}(2N + 446 - B_{\bar{N}}(2N + 444)) + B_{\bar{N}}(2N + 446 - B_{\bar{N}}(2N + 443)) \\
&= B_{\bar{N}}(2N + 446 - (2N + 83)) + B_{\bar{N}}(2N + 446 - (2N + 413)) + B_{\bar{N}}(2N + 446 - (2N + 418)) \\
&= B_{\bar{N}}(363) + B_{\bar{N}}(33) + B_{\bar{N}}(28) = 363 + 33 + 28 = \mathbf{424} \\
&(N \geq 363)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 447) &= B_{\bar{N}}(2N + 447 - B_{\bar{N}}(2N + 446)) + B_{\bar{N}}(2N + 447 - B_{\bar{N}}(2N + 445)) + B_{\bar{N}}(2N + 447 - B_{\bar{N}}(2N + 444)) \\
&= B_{\bar{N}}(2N + 447 - 424) + B_{\bar{N}}(2N + 447 - (2N + 83)) + B_{\bar{N}}(2N + 447 - (2N + 413)) \\
&= B_{\bar{N}}(2N + 23) + B_{\bar{N}}(364) + B_{\bar{N}}(34) = (N + 14) + 364 + 34 = \mathbf{N} + \mathbf{412} \\
&(N \geq 414)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 448) &= B_{\bar{N}}(2N + 448 - B_{\bar{N}}(2N + 447)) + B_{\bar{N}}(2N + 448 - B_{\bar{N}}(2N + 446)) + B_{\bar{N}}(2N + 448 - B_{\bar{N}}(2N + 445)) \\
&= B_{\bar{N}}(2N + 448 - (N + 412)) + B_{\bar{N}}(2N + 448 - 424) + B_{\bar{N}}(2N + 448 - (2N + 83)) \\
&= B_{\bar{N}}(N + 36) + B_{\bar{N}}(2N + 24) + B_{\bar{N}}(365) = 36 + (N + 28) + 365 = \mathbf{N} + 429 \\
&(N \geq 415)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 449) &= B_{\bar{N}}(2N + 449 - B_{\bar{N}}(2N + 448)) + B_{\bar{N}}(2N + 449 - B_{\bar{N}}(2N + 447)) + B_{\bar{N}}(2N + 449 - B_{\bar{N}}(2N + 446)) \\
&= B_{\bar{N}}(2N + 449 - (N + 429)) + B_{\bar{N}}(2N + 449 - (N + 412)) + B_{\bar{N}}(2N + 449 - 424) \\
&= B_{\bar{N}}(N + 20) + B_{\bar{N}}(N + 37) + B_{\bar{N}}(2N + 25) = (N + 15) + (N + 37) + (3N + 6) = \mathbf{5N} + 58 \\
&(N \geq 416)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 450) &= B_{\bar{N}}(2N + 450 - B_{\bar{N}}(2N + 449)) + B_{\bar{N}}(2N + 450 - B_{\bar{N}}(2N + 448)) + B_{\bar{N}}(2N + 450 - B_{\bar{N}}(2N + 447)) \\
&= B_{\bar{N}}(2N + 450 - (5N + 58)) + B_{\bar{N}}(2N + 450 - (N + 429)) + B_{\bar{N}}(2N + 450 - (N + 412)) \\
&= B_{\bar{N}}(-3N + 392) + B_{\bar{N}}(N + 21) + B_{\bar{N}}(N + 38) = 0 + (N + 16) + (2N + 10) = \mathbf{3N} + 26 \\
&(N \geq 131)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 451) &= B_{\bar{N}}(2N + 451 - B_{\bar{N}}(2N + 450)) + B_{\bar{N}}(2N + 451 - B_{\bar{N}}(2N + 449)) + B_{\bar{N}}(2N + 451 - B_{\bar{N}}(2N + 448)) \\
&= B_{\bar{N}}(2N + 451 - (3N + 26)) + B_{\bar{N}}(2N + 451 - (5N + 58)) + B_{\bar{N}}(2N + 451 - (N + 429)) \\
&= B_{\bar{N}}(-N + 425) + B_{\bar{N}}(-3N + 393) + B_{\bar{N}}(N + 22) = 0 + 0 + 22 = \mathbf{22} \\
&(N \geq 425)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 452) &= B_{\bar{N}}(2N + 452 - B_{\bar{N}}(2N + 451)) + B_{\bar{N}}(2N + 452 - B_{\bar{N}}(2N + 450)) + B_{\bar{N}}(2N + 452 - B_{\bar{N}}(2N + 449)) \\
&= B_{\bar{N}}(2N + 452 - 22) + B_{\bar{N}}(2N + 452 - (3N + 26)) + B_{\bar{N}}(2N + 452 - (5N + 58)) \\
&= B_{\bar{N}}(2N + 430) + B_{\bar{N}}(-N + 426) + B_{\bar{N}}(-3N + 394) = (N + 441) + 0 + 0 = \mathbf{N} + 441 \\
&(N \geq 426)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 453) &= B_{\bar{N}}(2N + 453 - B_{\bar{N}}(2N + 452)) + B_{\bar{N}}(2N + 453 - B_{\bar{N}}(2N + 451)) + B_{\bar{N}}(2N + 453 - B_{\bar{N}}(2N + 450)) \\
&= B_{\bar{N}}(2N + 453 - (N + 441)) + B_{\bar{N}}(2N + 453 - 22) + B_{\bar{N}}(2N + 453 - (3N + 26)) \\
&= B_{\bar{N}}(N + 12) + B_{\bar{N}}(2N + 431) + B_{\bar{N}}(-N + 427) = (N + 9) + (2N + 372) + 0 = \mathbf{3N} + \mathbf{381} \\
&(N \geq 427)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 454) &= B_{\bar{N}}(2N + 454 - B_{\bar{N}}(2N + 453)) + B_{\bar{N}}(2N + 454 - B_{\bar{N}}(2N + 452)) + B_{\bar{N}}(2N + 454 - B_{\bar{N}}(2N + 451)) \\
&= B_{\bar{N}}(2N + 454 - (3N + 381)) + B_{\bar{N}}(2N + 454 - (N + 441)) + B_{\bar{N}}(2N + 454 - 22) \\
&= B_{\bar{N}}(-N + 73) + B_{\bar{N}}(N + 13) + B_{\bar{N}}(2N + 432) = 0 + 15 + (N + 435) = \mathbf{N} + \mathbf{450} \\
&(N \geq 382)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 455) &= B_{\bar{N}}(2N + 455 - B_{\bar{N}}(2N + 454)) + B_{\bar{N}}(2N + 455 - B_{\bar{N}}(2N + 453)) + B_{\bar{N}}(2N + 455 - B_{\bar{N}}(2N + 452)) \\
&= B_{\bar{N}}(2N + 455 - (N + 450)) + B_{\bar{N}}(2N + 455 - (3N + 381)) + B_{\bar{N}}(2N + 455 - (N + 441)) \\
&= B_{\bar{N}}(N + 5) + B_{\bar{N}}(-N + 74) + B_{\bar{N}}(N + 14) = 9 + 0 + (N + 10) = \mathbf{N} + \mathbf{19} \\
&(N \geq 856)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 456) &= B_{\bar{N}}(2N + 456 - B_{\bar{N}}(2N + 455)) + B_{\bar{N}}(2N + 456 - B_{\bar{N}}(2N + 454)) + B_{\bar{N}}(2N + 456 - B_{\bar{N}}(2N + 453)) \\
&= B_{\bar{N}}(2N + 456 - (N + 19)) + B_{\bar{N}}(2N + 456 - (N + 450)) + B_{\bar{N}}(2N + 456 - (3N + 381)) \\
&= B_{\bar{N}}(N + 437) + B_{\bar{N}}(N + 6) + B_{\bar{N}}(-N + 75) = 7 + (N + 4) + 0 = \mathbf{N} + \mathbf{11} \\
&(N \geq 863)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 457) &= B_{\bar{N}}(2N + 457 - B_{\bar{N}}(2N + 456)) + B_{\bar{N}}(2N + 457 - B_{\bar{N}}(2N + 455)) + B_{\bar{N}}(2N + 457 - B_{\bar{N}}(2N + 454)) \\
&= B_{\bar{N}}(2N + 457 - (N + 11)) + B_{\bar{N}}(2N + 457 - (N + 19)) + B_{\bar{N}}(2N + 457 - (N + 450)) \\
&= B_{\bar{N}}(N + 446) + B_{\bar{N}}(N + 438) + B_{\bar{N}}(N + 7) = (2N + 56) + (2N + 169) + (N + 5) = \mathbf{5N} + \mathbf{230} \\
&(N \geq 870)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 458) &= B_{\bar{N}}(2N + 458 - B_{\bar{N}}(2N + 457)) + B_{\bar{N}}(2N + 458 - B_{\bar{N}}(2N + 456)) + B_{\bar{N}}(2N + 458 - B_{\bar{N}}(2N + 455)) \\
&= B_{\bar{N}}(2N + 458 - (5N + 230)) + B_{\bar{N}}(2N + 458 - (N + 11)) + B_{\bar{N}}(2N + 458 - (N + 19)) \\
&= B_{\bar{N}}(-3N + 228) + B_{\bar{N}}(N + 447) + B_{\bar{N}}(N + 439) = 0 + (N - 2) + (2N + 55) = \mathbf{3N} + \mathbf{53} \\
&(N \geq 247)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 459) &= B_{\bar{N}}(2N + 459 - B_{\bar{N}}(2N + 458)) + B_{\bar{N}}(2N + 459 - B_{\bar{N}}(2N + 457)) + B_{\bar{N}}(2N + 459 - B_{\bar{N}}(2N + 456)) \\
&= B_{\bar{N}}(2N + 459 - (3N + 53)) + B_{\bar{N}}(2N + 459 - (5N + 230)) + B_{\bar{N}}(2N + 459 - (N + 11)) \\
&= B_{\bar{N}}(-N + 406) + B_{\bar{N}}(-3N + 229) + B_{\bar{N}}(N + 448) = 0 + 0 + 450 = \mathbf{450} \\
&(N \geq 406)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 460) &= B_{\bar{N}}(2N + 460 - B_{\bar{N}}(2N + 459)) + B_{\bar{N}}(2N + 460 - B_{\bar{N}}(2N + 458)) + B_{\bar{N}}(2N + 460 - B_{\bar{N}}(2N + 457)) \\
&= B_{\bar{N}}(2N + 460 - 450) + B_{\bar{N}}(2N + 460 - (3N + 53)) + B_{\bar{N}}(2N + 460 - (5N + 230)) \\
&= B_{\bar{N}}(2N + 10) + B_{\bar{N}}(-N + 407) + B_{\bar{N}}(-3N + 230) = \left(\frac{15N}{7} - \frac{59}{7} \right) + 0 + 0 = \frac{\mathbf{15N}}{\mathbf{7}} - \frac{\mathbf{59}}{\mathbf{7}} \\
&(N \geq 600)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 461) &= B_{\bar{N}}(2N + 461 - B_{\bar{N}}(2N + 460)) + B_{\bar{N}}(2N + 461 - B_{\bar{N}}(2N + 459)) + B_{\bar{N}}(2N + 461 - B_{\bar{N}}(2N + 458)) \\
&= B_{\bar{N}}\left(2N + 461 - \left(\frac{15N}{7} - \frac{59}{7}\right)\right) + B_{\bar{N}}(2N + 461 - 450) + B_{\bar{N}}(2N + 461 - (3N + 53)) \\
&= B_{\bar{N}}\left(-\frac{N}{7} + \frac{3286}{7}\right) + B_{\bar{N}}(2N + 11) + B_{\bar{N}}(-N + 408) = 0 + (N - 2) + 0 = \mathbf{N} - \mathbf{2} \\
&(\mathbf{N} \geq \mathbf{3286})
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 462) &= B_{\bar{N}}(2N + 462 - B_{\bar{N}}(2N + 461)) + B_{\bar{N}}(2N + 462 - B_{\bar{N}}(2N + 460)) + B_{\bar{N}}(2N + 462 - B_{\bar{N}}(2N + 459)) \\
&= B_{\bar{N}}(2N + 462 - (N - 2)) + B_{\bar{N}}\left(2N + 462 - \left(\frac{15N}{7} - \frac{59}{7}\right)\right) + B_{\bar{N}}(2N + 462 - 450) \\
&= B_{\bar{N}}(N + 464) + B_{\bar{N}}\left(-\frac{N}{7} + \frac{3293}{7}\right) + B_{\bar{N}}(2N + 12) = (N + 466) + 0 + (N + 10) = \mathbf{2N} + \mathbf{476} \\
&(\mathbf{N} \geq \mathbf{3293})
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 463) &= B_{\bar{N}}(2N + 463 - B_{\bar{N}}(2N + 462)) + B_{\bar{N}}(2N + 463 - B_{\bar{N}}(2N + 461)) + B_{\bar{N}}(2N + 463 - B_{\bar{N}}(2N + 460)) \\
&= B_{\bar{N}}(2N + 463 - (2N + 476)) + B_{\bar{N}}(2N + 463 - (N - 2)) + B_{\bar{N}}\left(2N + 463 - \left(\frac{15N}{7} - \frac{59}{7}\right)\right) \\
&= B_{\bar{N}}(-13) + B_{\bar{N}}(N + 465) + B_{\bar{N}}\left(-\frac{N}{7} + \frac{3300}{7}\right) = 0 + 7 + 0 = \mathbf{7} \\
&(\mathbf{N} \geq \mathbf{3300})
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 464) &= B_{\bar{N}}(2N + 464 - B_{\bar{N}}(2N + 463)) + B_{\bar{N}}(2N + 464 - B_{\bar{N}}(2N + 462)) + B_{\bar{N}}(2N + 464 - B_{\bar{N}}(2N + 461)) \\
&= B_{\bar{N}}(2N + 464 - 7) + B_{\bar{N}}(2N + 464 - (2N + 476)) + B_{\bar{N}}(2N + 464 - (N - 2)) \\
&= B_{\bar{N}}(2N + 457) + B_{\bar{N}}(-12) + B_{\bar{N}}(N + 466) = (5N + 230) + 0 + (2N + 177) = \mathbf{7N} + \mathbf{407} \\
&(N \geq 603)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 465) &= B_{\bar{N}}(2N + 465 - B_{\bar{N}}(2N + 464)) + B_{\bar{N}}(2N + 465 - B_{\bar{N}}(2N + 463)) + B_{\bar{N}}(2N + 465 - B_{\bar{N}}(2N + 462)) \\
&= B_{\bar{N}}(2N + 465 - (7N + 407)) + B_{\bar{N}}(2N + 465 - 7) + B_{\bar{N}}(2N + 465 - (2N + 476)) \\
&= B_{\bar{N}}(-5N + 58) + B_{\bar{N}}(2N + 458) + B_{\bar{N}}(-11) = 0 + (3N + 53) + 0 = \mathbf{3N} + \mathbf{53} \\
&(N \geq 2095)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 466) &= B_{\bar{N}}(2N + 466 - B_{\bar{N}}(2N + 465)) + B_{\bar{N}}(2N + 466 - B_{\bar{N}}(2N + 464)) + B_{\bar{N}}(2N + 466 - B_{\bar{N}}(2N + 463)) \\
&= B_{\bar{N}}(2N + 466 - (3N + 53)) + B_{\bar{N}}(2N + 466 - (7N + 407)) + B_{\bar{N}}(2N + 466 - 7) \\
&= B_{\bar{N}}(-N + 413) + B_{\bar{N}}(-5N + 59) + B_{\bar{N}}(2N + 459) = 0 + 0 + 450 = \mathbf{450} \\
&(N \geq 2102)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 467) &= B_{\bar{N}}(2N + 467 - B_{\bar{N}}(2N + 466)) + B_{\bar{N}}(2N + 467 - B_{\bar{N}}(2N + 465)) + B_{\bar{N}}(2N + 467 - B_{\bar{N}}(2N + 464)) \\
&= B_{\bar{N}}(2N + 467 - 450) + B_{\bar{N}}(2N + 467 - (3N + 53)) + B_{\bar{N}}(2N + 467 - (7N + 407)) \\
&= B_{\bar{N}}(2N + 17) + B_{\bar{N}}(-N + 414) + B_{\bar{N}}(-5N + 60) = (2N + 16) + 0 + 0 = \mathbf{2N} + \mathbf{16} \\
&(N \geq 2109)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 468) &= B_{\bar{N}}(2N + 468 - B_{\bar{N}}(2N + 467)) + B_{\bar{N}}(2N + 468 - B_{\bar{N}}(2N + 466)) + B_{\bar{N}}(2N + 468 - B_{\bar{N}}(2N + 465)) \\
&= B_{\bar{N}}(2N + 468 - (2N + 16)) + B_{\bar{N}}(2N + 468 - 450) + B_{\bar{N}}(2N + 468 - (3N + 53)) \\
&= B_{\bar{N}}(452) + B_{\bar{N}}(2N + 18) + B_{\bar{N}}(-N + 415) = 452 + 29 + 0 = \mathbf{481} \\
&(N \geq 541)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 469) &= B_{\bar{N}}(2N + 469 - B_{\bar{N}}(2N + 468)) + B_{\bar{N}}(2N + 469 - B_{\bar{N}}(2N + 467)) + B_{\bar{N}}(2N + 469 - B_{\bar{N}}(2N + 466)) \\
&= B_{\bar{N}}(2N + 469 - 481) + B_{\bar{N}}(2N + 469 - (2N + 16)) + B_{\bar{N}}(2N + 469 - 450) \\
&= B_{\bar{N}}(2N - 12) + B_{\bar{N}}(453) + B_{\bar{N}}(2N + 19) = \left(\frac{15N}{7} - \frac{66}{7} \right) + 453 + (N + 8) = \frac{22N}{7} + \frac{3161}{7} \\
&(N \geq 540)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 470) &= B_{\bar{N}}(2N + 470 - B_{\bar{N}}(2N + 469)) + B_{\bar{N}}(2N + 470 - B_{\bar{N}}(2N + 468)) + B_{\bar{N}}(2N + 470 - B_{\bar{N}}(2N + 467)) \\
&= B_{\bar{N}}\left(2N + 470 - \left(\frac{22N}{7} + \frac{3161}{7}\right)\right) + B_{\bar{N}}(2N + 470 - 481) + B_{\bar{N}}(2N + 470 - (2N + 16)) \\
&= B_{\bar{N}}\left(-\frac{8N}{7} + \frac{129}{7}\right) + B_{\bar{N}}(2N - 11) + B_{\bar{N}}(454) = 0 + (N - 2) + 454 = \mathbf{N} + \mathbf{452} \\
&(N \geq 539)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 471) &= B_{\bar{N}}(2N + 471 - B_{\bar{N}}(2N + 470)) + B_{\bar{N}}(2N + 471 - B_{\bar{N}}(2N + 469)) + B_{\bar{N}}(2N + 471 - B_{\bar{N}}(2N + 468)) \\
&= B_{\bar{N}}(2N + 471 - (N + 452)) + B_{\bar{N}}\left(2N + 471 - \left(\frac{22N}{7} + \frac{3161}{7}\right)\right) + B_{\bar{N}}(2N + 471 - 481) \\
&= B_{\bar{N}}(N + 19) + B_{\bar{N}}\left(-\frac{8N}{7} + \frac{136}{7}\right) + B_{\bar{N}}(2N - 10) = (N + 13) + 0 + (N - 8) = \mathbf{2N} + \mathbf{5} \\
&(N \geq 77)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 472) &= B_{\bar{N}}(2N + 472 - B_{\bar{N}}(2N + 471)) + B_{\bar{N}}(2N + 472 - B_{\bar{N}}(2N + 470)) + B_{\bar{N}}(2N + 472 - B_{\bar{N}}(2N + 469)) \\
&= B_{\bar{N}}(2N + 472 - (2N + 5)) + B_{\bar{N}}(2N + 472 - (N + 452)) + B_{\bar{N}}\left(2N + 472 - \left(\frac{22N}{7} + \frac{3161}{7}\right)\right) \\
&= B_{\bar{N}}(467) + B_{\bar{N}}(N + 20) + B_{\bar{N}}\left(-\frac{8N}{7} + \frac{143}{7}\right) = 467 + (N + 15) + 0 = \mathbf{N} + \mathbf{482} \\
&(N \geq 467)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 473) &= B_{\bar{N}}(2N + 473 - B_{\bar{N}}(2N + 472)) + B_{\bar{N}}(2N + 473 - B_{\bar{N}}(2N + 471)) + B_{\bar{N}}(2N + 473 - B_{\bar{N}}(2N + 470)) \\
&= B_{\bar{N}}(2N + 473 - (N + 482)) + B_{\bar{N}}(2N + 473 - (2N + 5)) + B_{\bar{N}}(2N + 473 - (N + 452)) \\
&= B_{\bar{N}}(N - 9) + B_{\bar{N}}(468) + B_{\bar{N}}(N + 21) = (N - 9) + 468 + (N + 16) = \mathbf{2N} + \mathbf{475} \\
&(N \geq 468)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 474) &= B_{\bar{N}}(2N + 474 - B_{\bar{N}}(2N + 473)) + B_{\bar{N}}(2N + 474 - B_{\bar{N}}(2N + 472)) + B_{\bar{N}}(2N + 474 - B_{\bar{N}}(2N + 471)) \\
&= B_{\bar{N}}(2N + 474 - (2N + 475)) + B_{\bar{N}}(2N + 474 - (N + 482)) + B_{\bar{N}}(2N + 474 - (2N + 5)) \\
&= B_{\bar{N}}(-1) + B_{\bar{N}}(N - 8) + B_{\bar{N}}(469) = 0 + (N - 8) + 469 = \mathbf{N} + \mathbf{461} \\
&(N \geq 469)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 475) &= B_{\bar{N}}(2N + 475 - B_{\bar{N}}(2N + 474)) + B_{\bar{N}}(2N + 475 - B_{\bar{N}}(2N + 473)) + B_{\bar{N}}(2N + 475 - B_{\bar{N}}(2N + 472)) \\
&= B_{\bar{N}}(2N + 475 - (N + 461)) + B_{\bar{N}}(2N + 475 - (2N + 475)) + B_{\bar{N}}(2N + 475 - (N + 482)) \\
&= B_{\bar{N}}(N + 14) + B_{\bar{N}}(0) + B_{\bar{N}}(N - 7) = (N + 10) + 0 + (N - 7) = \mathbf{2N} + \mathbf{3} \\
&(N \geq 122)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 476) &= B_{\bar{N}}(2N + 476 - B_{\bar{N}}(2N + 475)) + B_{\bar{N}}(2N + 476 - B_{\bar{N}}(2N + 474)) + B_{\bar{N}}(2N + 476 - B_{\bar{N}}(2N + 473)) \\
&= B_{\bar{N}}(2N + 476 - (2N + 3)) + B_{\bar{N}}(2N + 476 - (N + 461)) + B_{\bar{N}}(2N + 476 - (2N + 475)) \\
&= B_{\bar{N}}(473) + B_{\bar{N}}(N + 15) + B_{\bar{N}}(1) = 473 + (N + 11) + 1 = \mathbf{N} + \mathbf{485} \\
&(N \geq 473)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 477) &= B_{\bar{N}}(2N + 477 - B_{\bar{N}}(2N + 476)) + B_{\bar{N}}(2N + 477 - B_{\bar{N}}(2N + 475)) + B_{\bar{N}}(2N + 477 - B_{\bar{N}}(2N + 474)) \\
&= B_{\bar{N}}(2N + 477 - (N + 485)) + B_{\bar{N}}(2N + 477 - (2N + 3)) + B_{\bar{N}}(2N + 477 - (N + 461)) \\
&= B_{\bar{N}}(N - 8) + B_{\bar{N}}(474) + B_{\bar{N}}(N + 16) = (N - 8) + 474 + 17 = \mathbf{N} + \mathbf{483} \\
&(N \geq 474)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 478) &= B_{\bar{N}}(2N + 478 - B_{\bar{N}}(2N + 477)) + B_{\bar{N}}(2N + 478 - B_{\bar{N}}(2N + 476)) + B_{\bar{N}}(2N + 478 - B_{\bar{N}}(2N + 475)) \\
&= B_{\bar{N}}(2N + 478 - (N + 483)) + B_{\bar{N}}(2N + 478 - (N + 485)) + B_{\bar{N}}(2N + 478 - (2N + 3)) \\
&= B_{\bar{N}}(N - 5) + B_{\bar{N}}(N - 7) + B_{\bar{N}}(475) = (N - 5) + (N - 7) + 475 = \mathbf{2N} + \mathbf{463} \\
&(N \geq 475)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 479) &= B_{\bar{N}}(2N + 479 - B_{\bar{N}}(2N + 478)) + B_{\bar{N}}(2N + 479 - B_{\bar{N}}(2N + 477)) + B_{\bar{N}}(2N + 479 - B_{\bar{N}}(2N + 476)) \\
&= B_{\bar{N}}(2N + 479 - (2N + 463)) + B_{\bar{N}}(2N + 479 - (N + 483)) + B_{\bar{N}}(2N + 479 - (N + 485)) \\
&= B_{\bar{N}}(16) + B_{\bar{N}}(N - 4) + B_{\bar{N}}(N - 6) = 16 + (N - 4) + (N - 6) = \mathbf{2N} + \mathbf{6} \\
&(N \geq 16)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 480) &= B_{\bar{N}}(2N + 480 - B_{\bar{N}}(2N + 479)) + B_{\bar{N}}(2N + 480 - B_{\bar{N}}(2N + 478)) + B_{\bar{N}}(2N + 480 - B_{\bar{N}}(2N + 477)) \\
&= B_{\bar{N}}(2N + 480 - (2N + 6)) + B_{\bar{N}}(2N + 480 - (2N + 463)) + B_{\bar{N}}(2N + 480 - (N + 483)) \\
&= B_{\bar{N}}(474) + B_{\bar{N}}(17) + B_{\bar{N}}(N - 3) = 474 + 17 + (N - 3) = \mathbf{N} + 488 \\
&(N \geq 474)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 481) &= B_{\bar{N}}(2N + 481 - B_{\bar{N}}(2N + 480)) + B_{\bar{N}}(2N + 481 - B_{\bar{N}}(2N + 479)) + B_{\bar{N}}(2N + 481 - B_{\bar{N}}(2N + 478)) \\
&= B_{\bar{N}}(2N + 481 - (N + 488)) + B_{\bar{N}}(2N + 481 - (2N + 6)) + B_{\bar{N}}(2N + 481 - (2N + 463)) \\
&= B_{\bar{N}}(N - 7) + B_{\bar{N}}(475) + B_{\bar{N}}(18) = (N - 7) + 475 + 18 = \mathbf{N} + 486 \\
&(N \geq 475)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 482) &= B_{\bar{N}}(2N + 482 - B_{\bar{N}}(2N + 481)) + B_{\bar{N}}(2N + 482 - B_{\bar{N}}(2N + 480)) + B_{\bar{N}}(2N + 482 - B_{\bar{N}}(2N + 479)) \\
&= B_{\bar{N}}(2N + 482 - (N + 486)) + B_{\bar{N}}(2N + 482 - (N + 488)) + B_{\bar{N}}(2N + 482 - (2N + 6)) \\
&= B_{\bar{N}}(N - 4) + B_{\bar{N}}(N - 6) + B_{\bar{N}}(476) = (N - 4) + (N - 6) + 476 = 2\mathbf{N} + 466 \\
&(N \geq 476)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 483) &= B_{\bar{N}}(2N + 483 - B_{\bar{N}}(2N + 482)) + B_{\bar{N}}(2N + 483 - B_{\bar{N}}(2N + 481)) + B_{\bar{N}}(2N + 483 - B_{\bar{N}}(2N + 480)) \\
&= B_{\bar{N}}(2N + 483 - (2N + 466)) + B_{\bar{N}}(2N + 483 - (N + 486)) + B_{\bar{N}}(2N + 483 - (N + 488)) \\
&= B_{\bar{N}}(17) + B_{\bar{N}}(N - 3) + B_{\bar{N}}(N - 5) = 17 + (N - 3) + (N - 5) = 2\mathbf{N} + 9 \\
&(N \geq 104)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 484) &= B_{\bar{N}}(2N + 484 - B_{\bar{N}}(2N + 483)) + B_{\bar{N}}(2N + 484 - B_{\bar{N}}(2N + 482)) + B_{\bar{N}}(2N + 484 - B_{\bar{N}}(2N + 481)) \\
&= B_{\bar{N}}(2N + 484 - (2N + 9)) + B_{\bar{N}}(2N + 484 - (2N + 466)) + B_{\bar{N}}(2N + 484 - (N + 486)) \\
&= B_{\bar{N}}(475) + B_{\bar{N}}(18) + B_{\bar{N}}(N - 2) = 475 + 18 + (N - 2) = \mathbf{N} + 491 \\
&(N \geq 475)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 485) &= B_{\bar{N}}(2N + 485 - B_{\bar{N}}(2N + 484)) + B_{\bar{N}}(2N + 485 - B_{\bar{N}}(2N + 483)) + B_{\bar{N}}(2N + 485 - B_{\bar{N}}(2N + 482)) \\
&= B_{\bar{N}}(2N + 485 - (N + 491)) + B_{\bar{N}}(2N + 485 - (2N + 9)) + B_{\bar{N}}(2N + 485 - (2N + 466)) \\
&= B_{\bar{N}}(N - 6) + B_{\bar{N}}(476) + B_{\bar{N}}(19) = (N - 6) + 476 + 19 = \mathbf{N} + 489 \\
&(N \geq 476)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 486) &= B_{\bar{N}}(2N + 486 - B_{\bar{N}}(2N + 485)) + B_{\bar{N}}(2N + 486 - B_{\bar{N}}(2N + 484)) + B_{\bar{N}}(2N + 486 - B_{\bar{N}}(2N + 483)) \\
&= B_{\bar{N}}(2N + 486 - (N + 489)) + B_{\bar{N}}(2N + 486 - (N + 491)) + B_{\bar{N}}(2N + 486 - (2N + 9)) \\
&= B_{\bar{N}}(N - 3) + B_{\bar{N}}(N - 5) + B_{\bar{N}}(477) = (N - 3) + (N - 5) + 477 = 2\mathbf{N} + 469 \\
&(N \geq 477)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 487) &= B_{\bar{N}}(2N + 487 - B_{\bar{N}}(2N + 486)) + B_{\bar{N}}(2N + 487 - B_{\bar{N}}(2N + 485)) + B_{\bar{N}}(2N + 487 - B_{\bar{N}}(2N + 484)) \\
&= B_{\bar{N}}(2N + 487 - (2N + 469)) + B_{\bar{N}}(2N + 487 - (N + 489)) + B_{\bar{N}}(2N + 487 - (N + 491)) \\
&= B_{\bar{N}}(18) + B_{\bar{N}}(N - 2) + B_{\bar{N}}(N - 4) = 18 + (N - 2) + (N - 4) = 2\mathbf{N} + 12 \\
&(N \geq 476)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 488) &= B_{\bar{N}}(2N + 488 - B_{\bar{N}}(2N + 487)) + B_{\bar{N}}(2N + 488 - B_{\bar{N}}(2N + 486)) + B_{\bar{N}}(2N + 488 - B_{\bar{N}}(2N + 485)) \\
&= B_{\bar{N}}(2N + 488 - (2N + 12)) + B_{\bar{N}}(2N + 488 - (2N + 469)) + B_{\bar{N}}(2N + 488 - (N + 489)) \\
&= B_{\bar{N}}(476) + B_{\bar{N}}(19) + B_{\bar{N}}(N - 1) = 476 + 19 + (N - 1) = \mathbf{N} + 494 \\
&(N \geq 503)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 489) &= B_{\bar{N}}(2N + 489 - B_{\bar{N}}(2N + 488)) + B_{\bar{N}}(2N + 489 - B_{\bar{N}}(2N + 487)) + B_{\bar{N}}(2N + 489 - B_{\bar{N}}(2N + 486)) \\
&= B_{\bar{N}}(2N + 489 - (N + 494)) + B_{\bar{N}}(2N + 489 - (2N + 12)) + B_{\bar{N}}(2N + 489 - (2N + 469)) \\
&= B_{\bar{N}}(N - 5) + B_{\bar{N}}(477) + B_{\bar{N}}(20) = (N - 5) + 477 + 20 = \mathbf{N} + 492 \\
&(N \geq 506)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 490) &= B_{\bar{N}}(2N + 490 - B_{\bar{N}}(2N + 489)) + B_{\bar{N}}(2N + 490 - B_{\bar{N}}(2N + 488)) + B_{\bar{N}}(2N + 490 - B_{\bar{N}}(2N + 487)) \\
&= B_{\bar{N}}(2N + 490 - (N + 492)) + B_{\bar{N}}(2N + 490 - (N + 494)) + B_{\bar{N}}(2N + 490 - (2N + 12)) \\
&= B_{\bar{N}}(N - 2) + B_{\bar{N}}(N - 4) + B_{\bar{N}}(478) = (N - 2) + (N - 4) + 478 = \mathbf{2N} + \mathbf{472} \\
&(N \geq 510)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 491) &= B_{\bar{N}}(2N + 491 - B_{\bar{N}}(2N + 490)) + B_{\bar{N}}(2N + 491 - B_{\bar{N}}(2N + 489)) + B_{\bar{N}}(2N + 491 - B_{\bar{N}}(2N + 488)) \\
&= B_{\bar{N}}(2N + 491 - (2N + 472)) + B_{\bar{N}}(2N + 491 - (N + 492)) + B_{\bar{N}}(2N + 491 - (N + 494)) \\
&= B_{\bar{N}}(19) + B_{\bar{N}}(N - 1) + B_{\bar{N}}(N - 3) = 19 + (N - 1) + (N - 3) = \mathbf{2N} + \mathbf{15} \\
&(N \geq 477)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 492) &= B_{\bar{N}}(2N + 492 - B_{\bar{N}}(2N + 491)) + B_{\bar{N}}(2N + 492 - B_{\bar{N}}(2N + 490)) + B_{\bar{N}}(2N + 492 - B_{\bar{N}}(2N + 489)) \\
&= B_{\bar{N}}(2N + 492 - (2N + 15)) + B_{\bar{N}}(2N + 492 - (2N + 472)) + B_{\bar{N}}(2N + 492 - (N + 492)) \\
&= B_{\bar{N}}(477) + B_{\bar{N}}(20) + B_{\bar{N}}(N) = 477 + 20 + N = \mathbf{N} + \mathbf{497} \\
&(N \geq 478)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 493) &= B_{\bar{N}}(2N + 493 - B_{\bar{N}}(2N + 492)) + B_{\bar{N}}(2N + 493 - B_{\bar{N}}(2N + 491)) + B_{\bar{N}}(2N + 493 - B_{\bar{N}}(2N + 490)) \\
&= B_{\bar{N}}(2N + 493 - (N + 497)) + B_{\bar{N}}(2N + 493 - (2N + 15)) + B_{\bar{N}}(2N + 493 - (2N + 472)) \\
&= B_{\bar{N}}(N - 4) + B_{\bar{N}}(478) + B_{\bar{N}}(21) = (N - 4) + 478 + 21 = \mathbf{N} + \mathbf{495} \\
&(N \geq 479)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 494) &= B_{\bar{N}}(2N + 494 - B_{\bar{N}}(2N + 493)) + B_{\bar{N}}(2N + 494 - B_{\bar{N}}(2N + 492)) + B_{\bar{N}}(2N + 494 - B_{\bar{N}}(2N + 491)) \\
&= B_{\bar{N}}(2N + 494 - (N + 495)) + B_{\bar{N}}(2N + 494 - (N + 497)) + B_{\bar{N}}(2N + 494 - (2N + 15)) \\
&= B_{\bar{N}}(N - 1) + B_{\bar{N}}(N - 3) + B_{\bar{N}}(479) = (N - 1) + (N - 3) + 479 = \mathbf{2N} + \mathbf{475} \\
&(N \geq 479)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 495) &= B_{\bar{N}}(2N + 495 - B_{\bar{N}}(2N + 494)) + B_{\bar{N}}(2N + 495 - B_{\bar{N}}(2N + 493)) + B_{\bar{N}}(2N + 495 - B_{\bar{N}}(2N + 492)) \\
&= B_{\bar{N}}(2N + 495 - (2N + 475)) + B_{\bar{N}}(2N + 495 - (N + 495)) + B_{\bar{N}}(2N + 495 - (N + 497)) \\
&= B_{\bar{N}}(20) + B_{\bar{N}}(N) + B_{\bar{N}}(N - 2) = 20 + N + (N - 2) = \mathbf{2N} + \mathbf{18} \\
&(N \geq 484)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 496) &= B_{\bar{N}}(2N + 496 - B_{\bar{N}}(2N + 495)) + B_{\bar{N}}(2N + 496 - B_{\bar{N}}(2N + 494)) + B_{\bar{N}}(2N + 496 - B_{\bar{N}}(2N + 493)) \\
&= B_{\bar{N}}(2N + 496 - (2N + 18)) + B_{\bar{N}}(2N + 496 - (2N + 475)) + B_{\bar{N}}(2N + 496 - (N + 495)) \\
&= B_{\bar{N}}(478) + B_{\bar{N}}(21) + B_{\bar{N}}(N + 1) = 478 + 21 + 6 = \mathbf{505} \\
&(N \geq 496)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 497) &= B_{\bar{N}}(2N + 497 - B_{\bar{N}}(2N + 496)) + B_{\bar{N}}(2N + 497 - B_{\bar{N}}(2N + 495)) + B_{\bar{N}}(2N + 497 - B_{\bar{N}}(2N + 494)) \\
&= B_{\bar{N}}(2N + 497 - 505) + B_{\bar{N}}(2N + 497 - (2N + 18)) + B_{\bar{N}}(2N + 497 - (2N + 475)) \\
&= B_{\bar{N}}(2N - 8) + B_{\bar{N}}(479) + B_{\bar{N}}(22) = (2N - 6) + 479 + 22 = \mathbf{2N} + \mathbf{495} \\
&(N \geq 497)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 498) &= B_{\bar{N}}(2N + 498 - B_{\bar{N}}(2N + 497)) + B_{\bar{N}}(2N + 498 - B_{\bar{N}}(2N + 496)) + B_{\bar{N}}(2N + 498 - B_{\bar{N}}(2N + 495)) \\
&= B_{\bar{N}}(2N + 498 - (2N + 495)) + B_{\bar{N}}(2N + 498 - 505) + B_{\bar{N}}(2N + 498 - (2N + 18)) \\
&= B_{\bar{N}}(3) + B_{\bar{N}}(2N - 7) + B_{\bar{N}}(480) = 3 + 7 + 480 = \mathbf{490} \\
&(N \geq 498)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 499) &= B_{\bar{N}}(2N + 499 - B_{\bar{N}}(2N + 498)) + B_{\bar{N}}(2N + 499 - B_{\bar{N}}(2N + 497)) + B_{\bar{N}}(2N + 499 - B_{\bar{N}}(2N + 496)) \\
&= B_{\bar{N}}(2N + 499 - 490) + B_{\bar{N}}(2N + 499 - (2N + 495)) + B_{\bar{N}}(2N + 499 - 505) \\
&= B_{\bar{N}}(2N + 9) + B_{\bar{N}}(4) + B_{\bar{N}}(2N - 6) = \left(\frac{32N}{7} + \frac{590}{7} \right) + 4 + \left(\frac{16N}{7} + \frac{295}{7} \right) = \frac{48\mathbf{N}}{7} + \frac{913}{7} \\
&(N \geq 73)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 500) &= B_{\bar{N}}(2N + 500 - B_{\bar{N}}(2N + 499)) + B_{\bar{N}}(2N + 500 - B_{\bar{N}}(2N + 498)) + B_{\bar{N}}(2N + 500 - B_{\bar{N}}(2N + 497)) \\
&= B_{\bar{N}}\left(2N + 500 - \left(\frac{48N}{7} + \frac{913}{7}\right)\right) + B_{\bar{N}}(2N + 500 - 490) + B_{\bar{N}}(2N + 500 - (2N + 495)) \\
&= B_{\bar{N}}\left(-\frac{34N}{7} + \frac{2587}{7}\right) + B_{\bar{N}}(2N + 10) + B_{\bar{N}}(5) = 0 + \left(\frac{15N}{7} - \frac{59}{7}\right) + 5 = \frac{15\mathbf{N}}{7} - \frac{24}{7} \\
&(N \geq 77)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 501) &= B_{\bar{N}}(2N + 501 - B_{\bar{N}}(2N + 500)) + B_{\bar{N}}(2N + 501 - B_{\bar{N}}(2N + 499)) + B_{\bar{N}}(2N + 501 - B_{\bar{N}}(2N + 498)) \\
&= B_{\bar{N}}\left(2N + 501 - \left(\frac{15N}{7} - \frac{24}{7}\right)\right) + B_{\bar{N}}\left(2N + 501 - \left(\frac{48N}{7} + \frac{913}{7}\right)\right) + B_{\bar{N}}(2N + 501 - 490) \\
&= B_{\bar{N}}\left(-\frac{N}{7} + \frac{3531}{7}\right) + B_{\bar{N}}\left(-\frac{34N}{7} + \frac{2594}{7}\right) + B_{\bar{N}}(2N + 11) = 0 + 0 + (N - 2) = \mathbf{N} - 2 \\
&(\mathbf{N} \geq 3531)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 502) &= B_{\bar{N}}(2N + 502 - B_{\bar{N}}(2N + 501)) + B_{\bar{N}}(2N + 502 - B_{\bar{N}}(2N + 500)) + B_{\bar{N}}(2N + 502 - B_{\bar{N}}(2N + 499)) \\
&= B_{\bar{N}}(2N + 502 - (N - 2)) + B_{\bar{N}}\left(2N + 502 - \left(\frac{15N}{7} - \frac{24}{7}\right)\right) + B_{\bar{N}}\left(2N + 502 - \left(\frac{48N}{7} + \frac{913}{7}\right)\right) \\
&= B_{\bar{N}}(N + 504) + B_{\bar{N}}\left(-\frac{N}{7} + \frac{3538}{7}\right) + B_{\bar{N}}\left(-\frac{34N}{7} + \frac{2601}{7}\right) = 506 + 0 + 0 = \mathbf{506} \\
&(\mathbf{N} \geq 3538)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 503) &= B_{\bar{N}}(2N + 503 - B_{\bar{N}}(2N + 502)) + B_{\bar{N}}(2N + 503 - B_{\bar{N}}(2N + 501)) + B_{\bar{N}}(2N + 503 - B_{\bar{N}}(2N + 500)) \\
&= B_{\bar{N}}(2N + 503 - 506) + B_{\bar{N}}(2N + 503 - (N - 2)) + B_{\bar{N}}\left(2N + 503 - \left(\frac{15N}{7} - \frac{24}{7}\right)\right) \\
&= B_{\bar{N}}(2N - 3) + B_{\bar{N}}(N + 505) + B_{\bar{N}}\left(-\frac{N}{7} + \frac{3545}{7}\right) = (N - 1) + (N + 506) + 0 = \mathbf{2N} + \mathbf{505} \\
&(\mathbf{N} \geq 3545)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 504) &= B_{\bar{N}}(2N + 504 - B_{\bar{N}}(2N + 503)) + B_{\bar{N}}(2N + 504 - B_{\bar{N}}(2N + 502)) + B_{\bar{N}}(2N + 504 - B_{\bar{N}}(2N + 501)) \\
&= B_{\bar{N}}(2N + 504 - (2N + 505)) + B_{\bar{N}}(2N + 504 - 506) + B_{\bar{N}}(2N + 504 - (N - 2)) \\
&= B_{\bar{N}}(-1) + B_{\bar{N}}(2N - 2) + B_{\bar{N}}(N + 506) = 0 + (2N - 1) + (N + 508) = \mathbf{3N} + \mathbf{507} \\
&(N \geq 427)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 505) &= B_{\bar{N}}(2N + 505 - B_{\bar{N}}(2N + 504)) + B_{\bar{N}}(2N + 505 - B_{\bar{N}}(2N + 503)) + B_{\bar{N}}(2N + 505 - B_{\bar{N}}(2N + 502)) \\
&= B_{\bar{N}}(2N + 505 - (3N + 507)) + B_{\bar{N}}(2N + 505 - (2N + 505)) + B_{\bar{N}}(2N + 505 - 506) \\
&= B_{\bar{N}}(-N - 2) + B_{\bar{N}}(0) + B_{\bar{N}}(2N - 1) = 0 + 0 + (N + 6) = \mathbf{N} + \mathbf{6} \\
&(N \geq 428)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 506) &= B_{\bar{N}}(2N + 506 - B_{\bar{N}}(2N + 505)) + B_{\bar{N}}(2N + 506 - B_{\bar{N}}(2N + 504)) + B_{\bar{N}}(2N + 506 - B_{\bar{N}}(2N + 503)) \\
&= B_{\bar{N}}(2N + 506 - (N + 6)) + B_{\bar{N}}(2N + 506 - (3N + 507)) + B_{\bar{N}}(2N + 506 - (2N + 505)) \\
&= B_{\bar{N}}(N + 500) + B_{\bar{N}}(-N - 1) + B_{\bar{N}}(1) = 7 + 0 + 1 = \mathbf{8} \\
&(N \geq 488)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 507) &= B_{\bar{N}}(2N + 507 - B_{\bar{N}}(2N + 506)) + B_{\bar{N}}(2N + 507 - B_{\bar{N}}(2N + 505)) + B_{\bar{N}}(2N + 507 - B_{\bar{N}}(2N + 504)) \\
&= B_{\bar{N}}(2N + 507 - 8) + B_{\bar{N}}(2N + 507 - (N + 6)) + B_{\bar{N}}(2N + 507 - (3N + 507)) \\
&= B_{\bar{N}}(2N + 499) + B_{\bar{N}}(N + 501) + B_{\bar{N}}(-N) = \left(\frac{48N}{7} + \frac{913}{7} \right) + (2N + 187) + 0 = \frac{62\mathbf{N}}{7} + \frac{2222}{7} \\
&(N \geq 487)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 508) &= B_{\bar{N}}(2N + 508 - B_{\bar{N}}(2N + 507)) + B_{\bar{N}}(2N + 508 - B_{\bar{N}}(2N + 506)) + B_{\bar{N}}(2N + 508 - B_{\bar{N}}(2N + 505)) \\
&= B_{\bar{N}}\left(2N + 508 - \left(\frac{62N}{7} + \frac{2222}{7}\right)\right) + B_{\bar{N}}(2N + 508 - 8) + B_{\bar{N}}(2N + 508 - (N + 6)) \\
&= B_{\bar{N}}\left(-\frac{48N}{7} + \frac{1334}{7}\right) + B_{\bar{N}}(2N + 500) + B_{\bar{N}}(N + 502) = 0 + \left(\frac{15N}{7} - \frac{24}{7}\right) + (2N + 64) = \frac{29\mathbf{N}}{7} + \frac{424}{7} \\
&(N \geq 486)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 509) &= B_{\bar{N}}(2N + 509 - B_{\bar{N}}(2N + 508)) + B_{\bar{N}}(2N + 509 - B_{\bar{N}}(2N + 507)) + B_{\bar{N}}(2N + 509 - B_{\bar{N}}(2N + 506)) \\
&= B_{\bar{N}}\left(2N + 509 - \left(\frac{29N}{7} + \frac{424}{7}\right)\right) + B_{\bar{N}}\left(2N + 509 - \left(\frac{62N}{7} + \frac{2222}{7}\right)\right) + B_{\bar{N}}(2N + 509 - 8) \\
&= B_{\bar{N}}\left(-\frac{15N}{7} + \frac{3139}{7}\right) + B_{\bar{N}}\left(-\frac{48N}{7} + \frac{1341}{7}\right) + B_{\bar{N}}(2N + 501) = 0 + 0 + (N - 2) = \mathbf{N} - \mathbf{2} \\
&(N \geq 462)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 510) &= B_{\bar{N}}(2N + 510 - B_{\bar{N}}(2N + 509)) + B_{\bar{N}}(2N + 510 - B_{\bar{N}}(2N + 508)) + B_{\bar{N}}(2N + 510 - B_{\bar{N}}(2N + 507)) \\
&= B_{\bar{N}}(2N + 510 - (N - 2)) + B_{\bar{N}}\left(2N + 510 - \left(\frac{29N}{7} + \frac{424}{7}\right)\right) + B_{\bar{N}}\left(2N + 510 - \left(\frac{62N}{7} + \frac{2222}{7}\right)\right) \\
&= B_{\bar{N}}(N + 512) + B_{\bar{N}}\left(-\frac{15N}{7} + \frac{3146}{7}\right) + B_{\bar{N}}\left(-\frac{48N}{7} + \frac{1348}{7}\right) = (N + 513) + 0 + 0 = \mathbf{N} + \mathbf{513} \\
&(N \geq 463)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 511) &= B_{\bar{N}}(2N + 511 - B_{\bar{N}}(2N + 510)) + B_{\bar{N}}(2N + 511 - B_{\bar{N}}(2N + 509)) + B_{\bar{N}}(2N + 511 - B_{\bar{N}}(2N + 508)) \\
&= B_{\bar{N}}(2N + 511 - (N + 513)) + B_{\bar{N}}(2N + 511 - (N - 2)) + B_{\bar{N}}\left(2N + 511 - \left(\frac{29N}{7} + \frac{424}{7}\right)\right) \\
&= B_{\bar{N}}(N - 2) + B_{\bar{N}}(N + 513) + B_{\bar{N}}\left(-\frac{15N}{7} + \frac{3153}{7}\right) = (N - 2) + (N + 515) + 0 = \mathbf{2N} + \mathbf{513} \\
&(N \geq 211)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 512) &= B_{\bar{N}}(2N + 512 - B_{\bar{N}}(2N + 511)) + B_{\bar{N}}(2N + 512 - B_{\bar{N}}(2N + 510)) + B_{\bar{N}}(2N + 512 - B_{\bar{N}}(2N + 509)) \\
&= B_{\bar{N}}(2N + 512 - (2N + 513)) + B_{\bar{N}}(2N + 512 - (N + 513)) + B_{\bar{N}}(2N + 512 - (N - 2)) \\
&= B_{\bar{N}}(-1) + B_{\bar{N}}(N - 1) + B_{\bar{N}}(N + 514) = 0 + (N - 1) + 7 = \mathbf{N} + \mathbf{6} \\
&(N \geq 186)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 513) &= B_{\bar{N}}(2N + 513 - B_{\bar{N}}(2N + 512)) + B_{\bar{N}}(2N + 513 - B_{\bar{N}}(2N + 511)) + B_{\bar{N}}(2N + 513 - B_{\bar{N}}(2N + 510)) \\
&= B_{\bar{N}}(2N + 513 - (N + 6)) + B_{\bar{N}}(2N + 513 - (2N + 513)) + B_{\bar{N}}(2N + 513 - (N + 513)) \\
&= B_{\bar{N}}(N + 507) + B_{\bar{N}}(0) + B_{\bar{N}}(N) = 7 + 0 + N = \mathbf{N} + \mathbf{7} \\
&(N \geq 187)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 514) &= B_{\bar{N}}(2N + 514 - B_{\bar{N}}(2N + 513)) + B_{\bar{N}}(2N + 514 - B_{\bar{N}}(2N + 512)) + B_{\bar{N}}(2N + 514 - B_{\bar{N}}(2N + 511)) \\
&= B_{\bar{N}}(2N + 514 - (N + 7)) + B_{\bar{N}}(2N + 514 - (N + 6)) + B_{\bar{N}}(2N + 514 - (2N + 513)) \\
&= B_{\bar{N}}(N + 507) + B_{\bar{N}}(N + 508) + B_{\bar{N}}(1) = 7 + (2N + 189) + 1 = \mathbf{2N} + \mathbf{197} \\
&(N \geq 1423)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 515) &= B_{\bar{N}}(2N + 515 - B_{\bar{N}}(2N + 514)) + B_{\bar{N}}(2N + 515 - B_{\bar{N}}(2N + 513)) + B_{\bar{N}}(2N + 515 - B_{\bar{N}}(2N + 512)) \\
&= B_{\bar{N}}(2N + 515 - (2N + 197)) + B_{\bar{N}}(2N + 515 - (N + 7)) + B_{\bar{N}}(2N + 515 - (N + 6)) \\
&= B_{\bar{N}}(318) + B_{\bar{N}}(N + 508) + B_{\bar{N}}(N + 509) = 318 + (2N + 189) + (2N + 65) = \mathbf{4N} + \mathbf{572} \\
&(N \geq 3138)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 516) &= B_{\bar{N}}(2N + 516 - B_{\bar{N}}(2N + 515)) + B_{\bar{N}}(2N + 516 - B_{\bar{N}}(2N + 514)) + B_{\bar{N}}(2N + 516 - B_{\bar{N}}(2N + 513)) \\
&= B_{\bar{N}}(2N + 516 - (4N + 572)) + B_{\bar{N}}(2N + 516 - (2N + 197)) + B_{\bar{N}}(2N + 516 - (N + 7)) \\
&= B_{\bar{N}}(-2N - 56) + B_{\bar{N}}(319) + B_{\bar{N}}(N + 509) = 0 + 319 + (2N + 65) = \mathbf{2N} + \mathbf{384} \\
&(N \geq 3145)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 517) &= B_{\bar{N}}(2N + 517 - B_{\bar{N}}(2N + 516)) + B_{\bar{N}}(2N + 517 - B_{\bar{N}}(2N + 515)) + B_{\bar{N}}(2N + 517 - B_{\bar{N}}(2N + 514)) \\
&= B_{\bar{N}}(2N + 517 - (2N + 384)) + B_{\bar{N}}(2N + 517 - (4N + 572)) + B_{\bar{N}}(2N + 517 - (2N + 197)) \\
&= B_{\bar{N}}(133) + B_{\bar{N}}(-2N - 55) + B_{\bar{N}}(320) = 133 + 0 + 320 = \mathbf{453} \\
&(N \geq 3152)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + \mathbf{518}) &= B_{\bar{N}}(2N + 518 - B_{\bar{N}}(2N + 517)) + B_{\bar{N}}(2N + 518 - B_{\bar{N}}(2N + 516)) + B_{\bar{N}}(2N + 518 - B_{\bar{N}}(2N + 515)) \\
&= B_{\bar{N}}(2N + 518 - 453) + B_{\bar{N}}(2N + 518 - (2N + 384)) + B_{\bar{N}}(2N + 518 - (4N + 572)) \\
&= B_{\bar{N}}(2N + 65) + B_{\bar{N}}(134) + B_{\bar{N}}(-2N - 54) = (N + 80) + 134 + 0 = \mathbf{N} + \mathbf{214} \\
&(N \geq 134)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + \mathbf{519}) &= B_{\bar{N}}(2N + 519 - B_{\bar{N}}(2N + 518)) + B_{\bar{N}}(2N + 519 - B_{\bar{N}}(2N + 517)) + B_{\bar{N}}(2N + 519 - B_{\bar{N}}(2N + 516)) \\
&= B_{\bar{N}}(2N + 519 - (N + 214)) + B_{\bar{N}}(2N + 519 - 453) + B_{\bar{N}}(2N + 519 - (2N + 384)) \\
&= B_{\bar{N}}(N + 305) + B_{\bar{N}}(2N + 66) + B_{\bar{N}}(135) = (2N + 131) + (N + 46) + 135 = \mathbf{3N} + \mathbf{312} \\
&(N \geq 135)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + \mathbf{520}) &= B_{\bar{N}}(2N + 520 - B_{\bar{N}}(2N + 519)) + B_{\bar{N}}(2N + 520 - B_{\bar{N}}(2N + 518)) + B_{\bar{N}}(2N + 520 - B_{\bar{N}}(2N + 517)) \\
&= B_{\bar{N}}(2N + 520 - (3N + 312)) + B_{\bar{N}}(2N + 520 - (N + 214)) + B_{\bar{N}}(2N + 520 - 453) \\
&= B_{\bar{N}}(-N + 208) + B_{\bar{N}}(N + 306) + B_{\bar{N}}(2N + 67) = 0 + (2N + 36) + (2N + 52) = \mathbf{4N} + \mathbf{88} \\
&(N \geq 208)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + \mathbf{521}) &= B_{\bar{N}}(2N + 521 - B_{\bar{N}}(2N + 520)) + B_{\bar{N}}(2N + 521 - B_{\bar{N}}(2N + 519)) + B_{\bar{N}}(2N + 521 - B_{\bar{N}}(2N + 518)) \\
&= B_{\bar{N}}(2N + 521 - (4N + 88)) + B_{\bar{N}}(2N + 521 - (3N + 312)) + B_{\bar{N}}(2N + 521 - (N + 214)) \\
&= B_{\bar{N}}(-2N + 433) + B_{\bar{N}}(-N + 209) + B_{\bar{N}}(N + 307) = 0 + 0 + (N - 2) = \mathbf{N} - \mathbf{2} \\
&(N \geq 217)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + \mathbf{522}) &= B_{\bar{N}}(2N + 522 - B_{\bar{N}}(2N + 521)) + B_{\bar{N}}(2N + 522 - B_{\bar{N}}(2N + 520)) + B_{\bar{N}}(2N + 522 - B_{\bar{N}}(2N + 519)) \\
&= B_{\bar{N}}(2N + 522 - (N - 2)) + B_{\bar{N}}(2N + 522 - (4N + 88)) + B_{\bar{N}}(2N + 522 - (3N + 312)) \\
&= B_{\bar{N}}(N + 524) + B_{\bar{N}}(-2N + 434) + B_{\bar{N}}(-N + 210) = (N - 2) + 0 + 0 = \mathbf{N} - \mathbf{2} \\
&(N \geq 217)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 523) &= B_{\bar{N}}(2N + 523 - B_{\bar{N}}(2N + 522)) + B_{\bar{N}}(2N + 523 - B_{\bar{N}}(2N + 521)) + B_{\bar{N}}(2N + 523 - B_{\bar{N}}(2N + 520)) \\
&= B_{\bar{N}}(2N + 523 - (N - 2)) + B_{\bar{N}}(2N + 523 - (N - 2)) + B_{\bar{N}}(2N + 523 - (4N + 88)) \\
&= B_{\bar{N}}(N + 525) + B_{\bar{N}}(N + 525) + B_{\bar{N}}(-2N + 435) = 527 + 527 + 0 = \mathbf{1054} \\
&(N \geq 218)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 524) &= B_{\bar{N}}(2N + 524 - B_{\bar{N}}(2N + 523)) + B_{\bar{N}}(2N + 524 - B_{\bar{N}}(2N + 522)) + B_{\bar{N}}(2N + 524 - B_{\bar{N}}(2N + 521)) \\
&= B_{\bar{N}}(2N + 524 - 1054) + B_{\bar{N}}(2N + 524 - (N - 2)) + B_{\bar{N}}(2N + 524 - (N - 2)) \\
&= B_{\bar{N}}(2N - 530) + B_{\bar{N}}(N + 526) + B_{\bar{N}}(N + 526) = \left(\frac{15N}{7} - \frac{584}{7}\right) + (N + 527) + (N + 527) = \frac{29N}{7} + \frac{6794}{7} \\
&(N \geq 3201)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 525) &= B_{\bar{N}}(2N + 525 - B_{\bar{N}}(2N + 524)) + B_{\bar{N}}(2N + 525 - B_{\bar{N}}(2N + 523)) + B_{\bar{N}}(2N + 525 - B_{\bar{N}}(2N + 522)) \\
&= B_{\bar{N}}\left(2N + 525 - \left(\frac{29N}{7} + \frac{6794}{7}\right)\right) + B_{\bar{N}}(2N + 525 - 1054) + B_{\bar{N}}(2N + 525 - (N - 2)) \\
&= B_{\bar{N}}\left(-\frac{15N}{7} - \frac{3119}{7}\right) + B_{\bar{N}}(2N - 529) + B_{\bar{N}}(N + 527) = 0 + (N - 2) + (N + 529) = \mathbf{2N} + \mathbf{527} \\
&(N \geq 596)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 526) &= B_{\bar{N}}(2N + 526 - B_{\bar{N}}(2N + 525)) + B_{\bar{N}}(2N + 526 - B_{\bar{N}}(2N + 524)) + B_{\bar{N}}(2N + 526 - B_{\bar{N}}(2N + 523)) \\
&= B_{\bar{N}}(2N + 526 - (2N + 527)) + B_{\bar{N}}\left(2N + 526 - \left(\frac{29N}{7} + \frac{6794}{7}\right)\right) + B_{\bar{N}}(2N + 526 - 1054) \\
&= B_{\bar{N}}(-1) + B_{\bar{N}}\left(-\frac{15N}{7} - \frac{3112}{7}\right) + B_{\bar{N}}(2N - 528) = 0 + 0 + (N - 526) = \mathbf{N} - \mathbf{526} \\
&(N \geq 595)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 527) &= B_{\bar{N}}(2N + 527 - B_{\bar{N}}(2N + 526)) + B_{\bar{N}}(2N + 527 - B_{\bar{N}}(2N + 525)) + B_{\bar{N}}(2N + 527 - B_{\bar{N}}(2N + 524)) \\
&= B_{\bar{N}}(2N + 527 - (N - 526)) + B_{\bar{N}}(2N + 527 - (2N + 527)) + B_{\bar{N}}\left(2N + 527 - \left(\frac{29N}{7} + \frac{6794}{7}\right)\right) \\
&= B_{\bar{N}}(N + 1053) + B_{\bar{N}}(0) + B_{\bar{N}}\left(-\frac{15N}{7} - \frac{3105}{7}\right) = 7 + 0 + 0 = \mathbf{7} \\
&(N \geq 1)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 528) &= B_{\bar{N}}(2N + 528 - B_{\bar{N}}(2N + 527)) + B_{\bar{N}}(2N + 528 - B_{\bar{N}}(2N + 526)) + B_{\bar{N}}(2N + 528 - B_{\bar{N}}(2N + 525)) \\
&= B_{\bar{N}}(2N + 528 - 7) + B_{\bar{N}}(2N + 528 - (N - 526)) + B_{\bar{N}}(2N + 528 - (2N + 527)) \\
&= B_{\bar{N}}(2N + 521) + B_{\bar{N}}(N + 1054) + B_{\bar{N}}(1) = (N - 2) + (2N + 345) + 1 = \mathbf{3N} + \mathbf{344} \\
&(N \geq 1)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 529) &= B_{\bar{N}}(2N + 529 - B_{\bar{N}}(2N + 528)) + B_{\bar{N}}(2N + 529 - B_{\bar{N}}(2N + 527)) + B_{\bar{N}}(2N + 529 - B_{\bar{N}}(2N + 526)) \\
&= B_{\bar{N}}(2N + 529 - (3N + 344)) + B_{\bar{N}}(2N + 529 - 7) + B_{\bar{N}}(2N + 529 - (N - 526)) \\
&= B_{\bar{N}}(-N + 185) + B_{\bar{N}}(2N + 522) + B_{\bar{N}}(N + 1055) = 0 + (N - 2) + (2N + 143) = \mathbf{3N} + \mathbf{141} \\
&(N \geq 185)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 530) &= B_{\bar{N}}(2N + 530 - B_{\bar{N}}(2N + 529)) + B_{\bar{N}}(2N + 530 - B_{\bar{N}}(2N + 528)) + B_{\bar{N}}(2N + 530 - B_{\bar{N}}(2N + 527)) \\
&= B_{\bar{N}}(2N + 530 - (3N + 141)) + B_{\bar{N}}(2N + 530 - (3N + 344)) + B_{\bar{N}}(2N + 530 - 7) \\
&= B_{\bar{N}}(-N + 389) + B_{\bar{N}}(-N + 186) + B_{\bar{N}}(2N + 523) = 0 + 0 + 1054 = \mathbf{1054} \\
&(N \geq 389)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 531) &= B_{\bar{N}}(2N + 531 - B_{\bar{N}}(2N + 530)) + B_{\bar{N}}(2N + 531 - B_{\bar{N}}(2N + 529)) + B_{\bar{N}}(2N + 531 - B_{\bar{N}}(2N + 528)) \\
&= B_{\bar{N}}(2N + 531 - 1054) + B_{\bar{N}}(2N + 531 - (3N + 141)) + B_{\bar{N}}(2N + 531 - (3N + 344)) \\
&= B_{\bar{N}}(2N - 523) + B_{\bar{N}}(-N + 390) + B_{\bar{N}}(-N + 187) = \left(\frac{15N}{7} - \frac{577}{7}\right) + 0 + 0 = \frac{\mathbf{15N}}{\mathbf{7}} - \frac{\mathbf{577}}{\mathbf{7}} \\
&(N \geq 590)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + \mathbf{532}) &= B_{\bar{N}}(2N + 532 - B_{\bar{N}}(2N + 531)) + B_{\bar{N}}(2N + 532 - B_{\bar{N}}(2N + 530)) + B_{\bar{N}}(2N + 532 - B_{\bar{N}}(2N + 529)) \\
&= B_{\bar{N}}\left(2N + 532 - \left(\frac{15N}{7} - \frac{577}{7}\right)\right) + B_{\bar{N}}(2N + 532 - 1054) + B_{\bar{N}}(2N + 532 - (3N + 141)) \\
&= B_{\bar{N}}\left(-\frac{N}{7} + \frac{4301}{7}\right) + B_{\bar{N}}(2N - 522) + B_{\bar{N}}(-N + 391) = 0 + (N - 2) + 0 = \mathbf{N} - \mathbf{2} \\
&(\mathbf{N} \geq \mathbf{4301})
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + \mathbf{533}) &= B_{\bar{N}}(2N + 533 - B_{\bar{N}}(2N + 532)) + B_{\bar{N}}(2N + 533 - B_{\bar{N}}(2N + 531)) + B_{\bar{N}}(2N + 533 - B_{\bar{N}}(2N + 530)) \\
&= B_{\bar{N}}(2N + 533 - (N - 2)) + B_{\bar{N}}\left(2N + 533 - \left(\frac{15N}{7} - \frac{577}{7}\right)\right) + B_{\bar{N}}(2N + 533 - 1054) \\
&= B_{\bar{N}}(N + 535) + B_{\bar{N}}\left(-\frac{N}{7} + \frac{4308}{7}\right) + B_{\bar{N}}(2N - 521) = 7 + 0 + (N - 519) = \mathbf{N} - \mathbf{512} \\
&(\mathbf{N} \geq \mathbf{4308})
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + \mathbf{534}) &= B_{\bar{N}}(2N + 534 - B_{\bar{N}}(2N + 533)) + B_{\bar{N}}(2N + 534 - B_{\bar{N}}(2N + 532)) + B_{\bar{N}}(2N + 534 - B_{\bar{N}}(2N + 531)) \\
&= B_{\bar{N}}(2N + 534 - (N - 512)) + B_{\bar{N}}(2N + 534 - (N - 2)) + B_{\bar{N}}\left(2N + 534 - \left(\frac{15N}{7} - \frac{577}{7}\right)\right) \\
&= B_{\bar{N}}(N + 1046) + B_{\bar{N}}(N + 536) + B_{\bar{N}}\left(-\frac{N}{7} + \frac{4315}{7}\right) = 7 + (2N + 197) + 0 = \mathbf{2N} + \mathbf{204} \\
&(\mathbf{N} \geq \mathbf{4315})
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + \mathbf{535}) &= B_{\bar{N}}(2N + 535 - B_{\bar{N}}(2N + 534)) + B_{\bar{N}}(2N + 535 - B_{\bar{N}}(2N + 533)) + B_{\bar{N}}(2N + 535 - B_{\bar{N}}(2N + 532)) \\
&= B_{\bar{N}}(2N + 535 - (2N + 204)) + B_{\bar{N}}(2N + 535 - (N - 512)) + B_{\bar{N}}(2N + 535 - (N - 2)) \\
&= B_{\bar{N}}(331) + B_{\bar{N}}(N + 1047) + B_{\bar{N}}(N + 537) = 331 + (2N + 343) + (2N + 69) = \mathbf{4N} + \mathbf{743} \\
&(N \geq 331)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 536) &= B_{\bar{N}}(2N + 536 - B_{\bar{N}}(2N + 535)) + B_{\bar{N}}(2N + 536 - B_{\bar{N}}(2N + 534)) + B_{\bar{N}}(2N + 536 - B_{\bar{N}}(2N + 533)) \\
&= B_{\bar{N}}(2N + 536 - (4N + 743)) + B_{\bar{N}}(2N + 536 - (2N + 204)) + B_{\bar{N}}(2N + 536 - (N - 512)) \\
&= B_{\bar{N}}(-2N - 207) + B_{\bar{N}}(332) + B_{\bar{N}}(N + 1048) = 0 + 332 + (2N + 142) = \mathbf{2N} + \mathbf{474} \\
&(N \geq 332)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 537) &= B_{\bar{N}}(2N + 537 - B_{\bar{N}}(2N + 536)) + B_{\bar{N}}(2N + 537 - B_{\bar{N}}(2N + 535)) + B_{\bar{N}}(2N + 537 - B_{\bar{N}}(2N + 534)) \\
&= B_{\bar{N}}(2N + 537 - (2N + 474)) + B_{\bar{N}}(2N + 537 - (4N + 743)) + B_{\bar{N}}(2N + 537 - (2N + 204)) \\
&= B_{\bar{N}}(63) + B_{\bar{N}}(-2N - 206) + B_{\bar{N}}(333) = 63 + 0 + 333 = \mathbf{396} \\
&(N \geq 333)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 538) &= B_{\bar{N}}(2N + 538 - B_{\bar{N}}(2N + 537)) + B_{\bar{N}}(2N + 538 - B_{\bar{N}}(2N + 536)) + B_{\bar{N}}(2N + 538 - B_{\bar{N}}(2N + 535)) \\
&= B_{\bar{N}}(2N + 538 - 396) + B_{\bar{N}}(2N + 538 - (2N + 474)) + B_{\bar{N}}(2N + 538 - (4N + 743)) \\
&= B_{\bar{N}}(2N + 142) + B_{\bar{N}}(64) + B_{\bar{N}}(-2N - 205) = (2N + 75) + 64 + 0 = \mathbf{2N} + \mathbf{139} \\
&(N \geq 64)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 539) &= B_{\bar{N}}(2N + 539 - B_{\bar{N}}(2N + 538)) + B_{\bar{N}}(2N + 539 - B_{\bar{N}}(2N + 537)) + B_{\bar{N}}(2N + 539 - B_{\bar{N}}(2N + 536)) \\
&= B_{\bar{N}}(2N + 539 - (2N + 139)) + B_{\bar{N}}(2N + 539 - 396) + B_{\bar{N}}(2N + 539 - (2N + 474)) \\
&= B_{\bar{N}}(400) + B_{\bar{N}}(2N + 143) + B_{\bar{N}}(65) = 400 + 68 + 65 = \mathbf{533} \\
&(N \geq 400)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 540) &= B_{\bar{N}}(2N + 540 - B_{\bar{N}}(2N + 539)) + B_{\bar{N}}(2N + 540 - B_{\bar{N}}(2N + 538)) + B_{\bar{N}}(2N + 540 - B_{\bar{N}}(2N + 537)) \\
&= B_{\bar{N}}(2N + 540 - 533) + B_{\bar{N}}(2N + 540 - (2N + 139)) + B_{\bar{N}}(2N + 540 - 396) \\
&= B_{\bar{N}}(2N + 7) + B_{\bar{N}}(401) + B_{\bar{N}}(2N + 144) = (3N + 2) + 401 + (2N + 61) = \mathbf{5N} + \mathbf{464} \\
&(N \geq 401)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 541) &= B_{\bar{N}}(2N + 541 - B_{\bar{N}}(2N + 540)) + B_{\bar{N}}(2N + 541 - B_{\bar{N}}(2N + 539)) + B_{\bar{N}}(2N + 541 - B_{\bar{N}}(2N + 538)) \\
&= B_{\bar{N}}(2N + 541 - (5N + 464)) + B_{\bar{N}}(2N + 541 - 533) + B_{\bar{N}}(2N + 541 - (2N + 139)) \\
&= B_{\bar{N}}(-3N + 77) + B_{\bar{N}}(2N + 8) + B_{\bar{N}}(402) = 0 + 15 + 402 = \mathbf{417} \\
&(N \geq 402)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 542) &= B_{\bar{N}}(2N + 542 - B_{\bar{N}}(2N + 541)) + B_{\bar{N}}(2N + 542 - B_{\bar{N}}(2N + 540)) + B_{\bar{N}}(2N + 542 - B_{\bar{N}}(2N + 539)) \\
&= B_{\bar{N}}(2N + 542 - 417) + B_{\bar{N}}(2N + 542 - (5N + 464)) + B_{\bar{N}}(2N + 542 - 533) \\
&= B_{\bar{N}}(2N + 125) + B_{\bar{N}}(-3N + 78) + B_{\bar{N}}(2N + 9) = (N + 17) + 0 + \left(\frac{32N}{7} + \frac{590}{7}\right) = \frac{39\mathbf{N}}{7} + \frac{709}{7} \\
&(N \geq 26)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 543) &= B_{\bar{N}}(2N + 543 - B_{\bar{N}}(2N + 542)) + B_{\bar{N}}(2N + 543 - B_{\bar{N}}(2N + 541)) + B_{\bar{N}}(2N + 543 - B_{\bar{N}}(2N + 540)) \\
&= B_{\bar{N}}\left(2N + 543 - \left(\frac{39N}{7} + \frac{709}{7}\right)\right) + B_{\bar{N}}(2N + 543 - 417) + B_{\bar{N}}(2N + 543 - (5N + 464)) \\
&= B_{\bar{N}}\left(-\frac{25N}{7} + \frac{3092}{7}\right) + B_{\bar{N}}(2N + 126) + B_{\bar{N}}(-3N + 79) = 0 + (3N + 88) + 0 = \mathbf{3N} + \mathbf{88} \\
&(N \geq 124)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 544) &= B_{\bar{N}}(2N + 544 - B_{\bar{N}}(2N + 543)) + B_{\bar{N}}(2N + 544 - B_{\bar{N}}(2N + 542)) + B_{\bar{N}}(2N + 544 - B_{\bar{N}}(2N + 541)) \\
&= B_{\bar{N}}(2N + 544 - (3N + 88)) + B_{\bar{N}}\left(2N + 544 - \left(\frac{39N}{7} + \frac{709}{7}\right)\right) + B_{\bar{N}}(2N + 544 - 417) \\
&= B_{\bar{N}}(-N + 456) + B_{\bar{N}}\left(-\frac{25N}{7} + \frac{3099}{7}\right) + B_{\bar{N}}(2N + 127) = 0 + 0 + (2N + 15) = \mathbf{2N} + \mathbf{15} \\
&(N \geq 456)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 545) &= B_{\bar{N}}(2N + 545 - B_{\bar{N}}(2N + 544)) + B_{\bar{N}}(2N + 545 - B_{\bar{N}}(2N + 543)) + B_{\bar{N}}(2N + 545 - B_{\bar{N}}(2N + 542)) \\
&= B_{\bar{N}}(2N + 545 - (2N + 15)) + B_{\bar{N}}(2N + 545 - (3N + 88)) + B_{\bar{N}}\left(2N + 545 - \left(\frac{39N}{7} + \frac{709}{7}\right)\right) \\
&= B_{\bar{N}}(530) + B_{\bar{N}}(-N + 457) + B_{\bar{N}}\left(-\frac{25N}{7} + \frac{3106}{7}\right) = 530 + 0 + 0 = \mathbf{530} \\
&(N \geq 530)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 546) &= B_{\bar{N}}(2N + 546 - B_{\bar{N}}(2N + 545)) + B_{\bar{N}}(2N + 546 - B_{\bar{N}}(2N + 544)) + B_{\bar{N}}(2N + 546 - B_{\bar{N}}(2N + 543)) \\
&= B_{\bar{N}}(2N + 546 - 530) + B_{\bar{N}}(2N + 546 - (2N + 15)) + B_{\bar{N}}(2N + 546 - (3N + 88)) \\
&= B_{\bar{N}}(2N + 16) + B_{\bar{N}}(531) + B_{\bar{N}}(-N + 458) = (2N + 6) + 531 + 0 = \mathbf{2N} + \mathbf{537} \\
&(N \geq 531)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 547) &= B_{\bar{N}}(2N + 547 - B_{\bar{N}}(2N + 546)) + B_{\bar{N}}(2N + 547 - B_{\bar{N}}(2N + 545)) + B_{\bar{N}}(2N + 547 - B_{\bar{N}}(2N + 544)) \\
&= B_{\bar{N}}(2N + 547 - (2N + 537)) + B_{\bar{N}}(2N + 547 - 530) + B_{\bar{N}}(2N + 547 - (2N + 15)) \\
&= B_{\bar{N}}(10) + B_{\bar{N}}(2N + 17) + B_{\bar{N}}(532) = 10 + (2N + 16) + 532 = \mathbf{2N} + \mathbf{558} \\
&(N \geq 532)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 548) &= B_{\bar{N}}(2N + 548 - B_{\bar{N}}(2N + 547)) + B_{\bar{N}}(2N + 548 - B_{\bar{N}}(2N + 546)) + B_{\bar{N}}(2N + 548 - B_{\bar{N}}(2N + 545)) \\
&= B_{\bar{N}}(2N + 548 - (2N + 558)) + B_{\bar{N}}(2N + 548 - (2N + 537)) + B_{\bar{N}}(2N + 548 - 530) \\
&= B_{\bar{N}}(-10) + B_{\bar{N}}(11) + B_{\bar{N}}(2N + 18) = 0 + 11 + 29 = \mathbf{40} \\
&(N \geq 11)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 549) &= B_{\bar{N}}(2N + 549 - B_{\bar{N}}(2N + 548)) + B_{\bar{N}}(2N + 549 - B_{\bar{N}}(2N + 547)) + B_{\bar{N}}(2N + 549 - B_{\bar{N}}(2N + 546)) \\
&= B_{\bar{N}}(2N + 549 - 40) + B_{\bar{N}}(2N + 549 - (2N + 558)) + B_{\bar{N}}(2N + 549 - (2N + 537)) \\
&= B_{\bar{N}}(2N + 509) + B_{\bar{N}}(-9) + B_{\bar{N}}(12) = (N - 2) + 0 + 12 = \mathbf{N} + \mathbf{10} \\
&(N \geq 12)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 550) &= B_{\bar{N}}(2N + 550 - B_{\bar{N}}(2N + 549)) + B_{\bar{N}}(2N + 550 - B_{\bar{N}}(2N + 548)) + B_{\bar{N}}(2N + 550 - B_{\bar{N}}(2N + 547)) \\
&= B_{\bar{N}}(2N + 550 - (N + 10)) + B_{\bar{N}}(2N + 550 - 40) + B_{\bar{N}}(2N + 550 - (2N + 558)) \\
&= B_{\bar{N}}(N + 540) + B_{\bar{N}}(2N + 510) + B_{\bar{N}}(-8) = (N + 541) + (N + 513) + 0 = \mathbf{2N} + \mathbf{1054} \\
&(N \geq 1)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 551) &= B_{\bar{N}}(2N + 551 - B_{\bar{N}}(2N + 550)) + B_{\bar{N}}(2N + 551 - B_{\bar{N}}(2N + 549)) + B_{\bar{N}}(2N + 551 - B_{\bar{N}}(2N + 548)) \\
&= B_{\bar{N}}(2N + 551 - (2N + 1054)) + B_{\bar{N}}(2N + 551 - (N + 10)) + B_{\bar{N}}(2N + 551 - 40) \\
&= B_{\bar{N}}(-503) + B_{\bar{N}}(N + 541) + B_{\bar{N}}(2N + 511) = 0 + (N + 543) + (2N + 513) = \mathbf{3N} + \mathbf{1056} \\
&(N \geq 1)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 552) &= B_{\bar{N}}(2N + 552 - B_{\bar{N}}(2N + 551)) + B_{\bar{N}}(2N + 552 - B_{\bar{N}}(2N + 550)) + B_{\bar{N}}(2N + 552 - B_{\bar{N}}(2N + 549)) \\
&= B_{\bar{N}}(2N + 552 - (3N + 1056)) + B_{\bar{N}}(2N + 552 - (2N + 1054)) + B_{\bar{N}}(2N + 552 - (N + 10)) \\
&= B_{\bar{N}}(-N - 504) + B_{\bar{N}}(-502) + B_{\bar{N}}(N + 542) = 0 + 0 + 7 = \mathbf{7} \\
&(N \geq 1)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 553) &= B_{\bar{N}}(2N + 553 - B_{\bar{N}}(2N + 552)) + B_{\bar{N}}(2N + 553 - B_{\bar{N}}(2N + 551)) + B_{\bar{N}}(2N + 553 - B_{\bar{N}}(2N + 550)) \\
&= B_{\bar{N}}(2N + 553 - 7) + B_{\bar{N}}(2N + 553 - (3N + 1056)) + B_{\bar{N}}(2N + 553 - (2N + 1054)) \\
&= B_{\bar{N}}(2N + 546) + B_{\bar{N}}(-N - 503) + B_{\bar{N}}(-501) = (2N + 537) + 0 + 0 = \mathbf{2N} + \mathbf{537} \\
&(N \geq 1)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 554) &= B_{\bar{N}}(2N + 554 - B_{\bar{N}}(2N + 553)) + B_{\bar{N}}(2N + 554 - B_{\bar{N}}(2N + 552)) + B_{\bar{N}}(2N + 554 - B_{\bar{N}}(2N + 551)) \\
&= B_{\bar{N}}(2N + 554 - (2N + 537)) + B_{\bar{N}}(2N + 554 - 7) + B_{\bar{N}}(2N + 554 - (3N + 1056)) \\
&= B_{\bar{N}}(17) + B_{\bar{N}}(2N + 547) + B_{\bar{N}}(-N - 502) = 17 + (2N + 558) + 0 = \mathbf{2N} + \mathbf{575} \\
&(N \geq 17)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 555) &= B_{\bar{N}}(2N + 555 - B_{\bar{N}}(2N + 554)) + B_{\bar{N}}(2N + 555 - B_{\bar{N}}(2N + 553)) + B_{\bar{N}}(2N + 555 - B_{\bar{N}}(2N + 552)) \\
&= B_{\bar{N}}(2N + 555 - (2N + 575)) + B_{\bar{N}}(2N + 555 - (2N + 537)) + B_{\bar{N}}(2N + 555 - 7) \\
&= B_{\bar{N}}(-20) + B_{\bar{N}}(18) + B_{\bar{N}}(2N + 548) = 0 + 18 + 40 = \mathbf{58} \\
&(N \geq 18)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 556) &= B_{\bar{N}}(2N + 556 - B_{\bar{N}}(2N + 555)) + B_{\bar{N}}(2N + 556 - B_{\bar{N}}(2N + 554)) + B_{\bar{N}}(2N + 556 - B_{\bar{N}}(2N + 553)) \\
&= B_{\bar{N}}(2N + 556 - 58) + B_{\bar{N}}(2N + 556 - (2N + 575)) + B_{\bar{N}}(2N + 556 - (2N + 537)) \\
&= B_{\bar{N}}(2N + 498) + B_{\bar{N}}(-19) + B_{\bar{N}}(19) = 490 + 0 + 19 = \mathbf{509} \\
&(N \geq 19)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 557) &= B_{\bar{N}}(2N + 557 - B_{\bar{N}}(2N + 556)) + B_{\bar{N}}(2N + 557 - B_{\bar{N}}(2N + 555)) + B_{\bar{N}}(2N + 557 - B_{\bar{N}}(2N + 554)) \\
&= B_{\bar{N}}(2N + 557 - 509) + B_{\bar{N}}(2N + 557 - 58) + B_{\bar{N}}(2N + 557 - (2N + 575)) \\
&= B_{\bar{N}}(2N + 48) + B_{\bar{N}}(2N + 499) + B_{\bar{N}}(-18) = (3N + 29) + \left(\frac{48N}{7} + \frac{913}{7}\right) + 0 = \frac{69\mathbf{N}}{7} + \frac{1116}{7} \\
&(N \geq 1)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 558) &= B_{\bar{N}}(2N + 558 - B_{\bar{N}}(2N + 557)) + B_{\bar{N}}(2N + 558 - B_{\bar{N}}(2N + 556)) + B_{\bar{N}}(2N + 558 - B_{\bar{N}}(2N + 555)) \\
&= B_{\bar{N}}\left(2N + 558 - \left(\frac{69N}{7} + \frac{1116}{7}\right)\right) + B_{\bar{N}}(2N + 558 - 509) + B_{\bar{N}}(2N + 558 - 58) \\
&= B_{\bar{N}}\left(-\frac{55N}{7} + \frac{2790}{7}\right) + B_{\bar{N}}(2N + 49) + B_{\bar{N}}(2N + 500) = 0 + 37 + \left(\frac{15N}{7} - \frac{24}{7}\right) = \frac{15\mathbf{N}}{7} + \frac{235}{7} \\
&(N \geq 51)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 559) &= B_{\bar{N}}(2N + 559 - B_{\bar{N}}(2N + 558)) + B_{\bar{N}}(2N + 559 - B_{\bar{N}}(2N + 557)) + B_{\bar{N}}(2N + 559 - B_{\bar{N}}(2N + 556)) \\
&= B_{\bar{N}}\left(2N + 559 - \left(\frac{15N}{7} + \frac{235}{7}\right)\right) + B_{\bar{N}}\left(2N + 559 - \left(\frac{69N}{7} + \frac{1116}{7}\right)\right) + B_{\bar{N}}(2N + 559 - 509) \\
&= B_{\bar{N}}\left(-\frac{N}{7} + \frac{3678}{7}\right) + B_{\bar{N}}\left(-\frac{55N}{7} + \frac{2797}{7}\right) + B_{\bar{N}}(2N + 50) = 0 + 0 + (3N + 43) = \mathbf{3N} + \mathbf{43} \\
&(N \geq 3678)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 560) &= B_{\bar{N}}(2N + 560 - B_{\bar{N}}(2N + 559)) + B_{\bar{N}}(2N + 560 - B_{\bar{N}}(2N + 558)) + B_{\bar{N}}(2N + 560 - B_{\bar{N}}(2N + 557)) \\
&= B_{\bar{N}}(2N + 560 - (3N + 43)) + B_{\bar{N}}\left(2N + 560 - \left(\frac{15N}{7} + \frac{235}{7}\right)\right) + B_{\bar{N}}\left(2N + 560 - \left(\frac{69N}{7} + \frac{1116}{7}\right)\right) \\
&= B_{\bar{N}}(-N + 517) + B_{\bar{N}}\left(-\frac{N}{7} + \frac{3685}{7}\right) + B_{\bar{N}}\left(-\frac{55N}{7} + \frac{2804}{7}\right) = 0 + 0 + 0 = \mathbf{0} \\
&(N \geq 3685)
\end{aligned}$$