

Terms $B_{\bar{N}}(2N - 1)$ through $B_{\bar{N}}(2N + 524)$ when $N \equiv 2 \pmod{7}$

When $N \equiv 2 \pmod{7}$ and $N \geq 72$, a pattern with 7 interleaved linear sequences lasts from index $N + 67$ through $2N - 2$. If $N \geq 3201$, there are 526 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.

$$\begin{aligned}
 \mathbf{B}_{\bar{N}}(\mathbf{2N} - \mathbf{1}) &= B_{\bar{N}}(2N - 1 - B_{\bar{N}}(2N - 2)) + B_{\bar{N}}(2N - 1 - B_{\bar{N}}(2N - 3)) + B_{\bar{N}}(2N - 1 - B_{\bar{N}}(2N - 4)) \\
 &= B_{\bar{N}}(2N - 1 - N) + B_{\bar{N}}(2N - 1 - (N - 2)) + B_{\bar{N}}\left(2N - 1 - \left(\frac{15N}{7} - \frac{58}{7}\right)\right) \\
 &= B_{\bar{N}}(N - 1) + B_{\bar{N}}(N + 1) + B_{\bar{N}}\left(-\frac{N}{7} + \frac{51}{7}\right) = (N - 1) + 6 + 0 = \mathbf{N} + \mathbf{5} \\
 &(N \geq 71)
 \end{aligned}$$

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

$$\begin{aligned}
 \mathbf{B}_{\bar{N}}(\mathbf{2N} + \mathbf{1}) &= B_{\bar{N}}(2N + 1 - B_{\bar{N}}(2N)) + B_{\bar{N}}(2N + 1 - B_{\bar{N}}(2N - 1)) + B_{\bar{N}}(2N + 1 - B_{\bar{N}}(2N - 2)) \\
 &= B_{\bar{N}}(2N + 1 - (3N - 4)) + B_{\bar{N}}(2N + 1 - (N + 5)) + B_{\bar{N}}(2N + 1 - N) \\
 &= B_{\bar{N}}(-N + 5) + B_{\bar{N}}(N - 4) + B_{\bar{N}}(N + 1) = 0 + (N - 4) + 6 = \mathbf{N} + \mathbf{2} \\
 &(N \geq 72)
 \end{aligned}$$

$$\begin{aligned}
 \mathbf{B}_{\bar{N}}(\mathbf{2N} + \mathbf{2}) &= B_{\bar{N}}(2N + 2 - B_{\bar{N}}(2N + 1)) + B_{\bar{N}}(2N + 2 - B_{\bar{N}}(2N)) + B_{\bar{N}}(2N + 2 - B_{\bar{N}}(2N - 1)) \\
 &= B_{\bar{N}}(2N + 2 - (N + 2)) + B_{\bar{N}}(2N + 2 - (3N - 4)) + B_{\bar{N}}(2N + 2 - (N + 5)) \\
 &= B_{\bar{N}}(N) + B_{\bar{N}}(-N + 6) + B_{\bar{N}}(N - 3) = N + 0 + (N - 3) = \mathbf{2N} - \mathbf{3} \\
 &(N \geq 71)
 \end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 3) &= B_{\bar{N}}(2N + 3 - B_{\bar{N}}(2N + 2)) + B_{\bar{N}}(2N + 3 - B_{\bar{N}}(2N + 1)) + B_{\bar{N}}(2N + 3 - B_{\bar{N}}(2N)) \\
&= B_{\bar{N}}(2N + 3 - (2N - 3)) + B_{\bar{N}}(2N + 3 - (N + 2)) + B_{\bar{N}}(2N + 3 - (3N - 4)) \\
&= B_{\bar{N}}(6) + B_{\bar{N}}(N + 1) + B_{\bar{N}}(-N + 7) = 6 + 6 + 0 = \mathbf{12} \\
&(N \geq 7)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 4) &= B_{\bar{N}}(2N + 4 - B_{\bar{N}}(2N + 3)) + B_{\bar{N}}(2N + 4 - B_{\bar{N}}(2N + 2)) + B_{\bar{N}}(2N + 4 - B_{\bar{N}}(2N + 1)) \\
&= B_{\bar{N}}(2N + 4 - 12) + B_{\bar{N}}(2N + 4 - (2N - 3)) + B_{\bar{N}}(2N + 4 - (N + 2)) \\
&= B_{\bar{N}}(2N - 8) + B_{\bar{N}}(7) + B_{\bar{N}}(N + 2) = (2N - 7) + 7 + (N + 1) = \mathbf{3N} + \mathbf{1} \\
&(\mathbf{N} \geq \mathbf{75})
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 5) &= B_{\bar{N}}(2N + 5 - B_{\bar{N}}(2N + 4)) + B_{\bar{N}}(2N + 5 - B_{\bar{N}}(2N + 3)) + B_{\bar{N}}(2N + 5 - B_{\bar{N}}(2N + 2)) \\
&= B_{\bar{N}}(2N + 5 - (3N + 1)) + B_{\bar{N}}(2N + 5 - 12) + B_{\bar{N}}(2N + 5 - (2N - 3)) \\
&= B_{\bar{N}}(-N + 4) + B_{\bar{N}}(2N - 7) + B_{\bar{N}}(8) = 0 + (2N - 5) + 8 = \mathbf{2N} + \mathbf{3} \\
&(N \geq 74)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 6) &= B_{\bar{N}}(2N + 6 - B_{\bar{N}}(2N + 5)) + B_{\bar{N}}(2N + 6 - B_{\bar{N}}(2N + 4)) + B_{\bar{N}}(2N + 6 - B_{\bar{N}}(2N + 3)) \\
&= B_{\bar{N}}(2N + 6 - (2N + 3)) + B_{\bar{N}}(2N + 6 - (3N + 1)) + B_{\bar{N}}(2N + 6 - 12) \\
&= B_{\bar{N}}(3) + B_{\bar{N}}(-N + 5) + B_{\bar{N}}(2N - 6) = 3 + 0 + 7 = \mathbf{10} \\
&(N \geq 73)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 7) &= B_{\bar{N}}(2N + 7 - B_{\bar{N}}(2N + 6)) + B_{\bar{N}}(2N + 7 - B_{\bar{N}}(2N + 5)) + B_{\bar{N}}(2N + 7 - B_{\bar{N}}(2N + 4)) \\
&= B_{\bar{N}}(2N + 7 - 10) + B_{\bar{N}}(2N + 7 - (2N + 3)) + B_{\bar{N}}(2N + 7 - (3N + 1)) \\
&= B_{\bar{N}}(2N - 3) + B_{\bar{N}}(4) + B_{\bar{N}}(-N + 6) = (N - 2) + 4 + 0 = \mathbf{N} + \mathbf{2} \\
&(\mathbf{N} \geq \mathbf{77})
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 8) &= B_{\bar{N}}(2N + 8 - B_{\bar{N}}(2N + 7)) + B_{\bar{N}}(2N + 8 - B_{\bar{N}}(2N + 6)) + B_{\bar{N}}(2N + 8 - B_{\bar{N}}(2N + 5)) \\
&= B_{\bar{N}}(2N + 8 - (N + 2)) + B_{\bar{N}}(2N + 8 - 10) + B_{\bar{N}}(2N + 8 - (2N + 3)) \\
&= B_{\bar{N}}(N + 6) + B_{\bar{N}}(2N - 2) + B_{\bar{N}}(5) = (N + 4) + N + 5 = \mathbf{2N} + \mathbf{9} \\
&(N \geq 76)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 9) &= B_{\bar{N}}(2N + 9 - B_{\bar{N}}(2N + 8)) + B_{\bar{N}}(2N + 9 - B_{\bar{N}}(2N + 7)) + B_{\bar{N}}(2N + 9 - B_{\bar{N}}(2N + 6)) \\
&= B_{\bar{N}}(2N + 9 - (2N + 9)) + B_{\bar{N}}(2N + 9 - (N + 2)) + B_{\bar{N}}(2N + 9 - 10) \\
&= B_{\bar{N}}(0) + B_{\bar{N}}(N + 7) + B_{\bar{N}}(2N - 1) = 0 + (N + 5) + (N + 5) = \mathbf{2N} + \mathbf{10} \\
&(\mathbf{N} \geq \mathbf{105})
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 10) &= B_{\bar{N}}(2N + 10 - B_{\bar{N}}(2N + 9)) + B_{\bar{N}}(2N + 10 - B_{\bar{N}}(2N + 8)) + B_{\bar{N}}(2N + 10 - B_{\bar{N}}(2N + 7)) \\
&= B_{\bar{N}}(2N + 10 - (2N + 10)) + B_{\bar{N}}(2N + 10 - (2N + 9)) + B_{\bar{N}}(2N + 10 - (N + 2)) \\
&= B_{\bar{N}}(0) + B_{\bar{N}}(1) + B_{\bar{N}}(N + 8) = 0 + 1 + (N + 6) = \mathbf{N} + \mathbf{7} \\
&(\mathbf{N} \geq \mathbf{112})
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 11) &= B_{\bar{N}}(2N + 11 - B_{\bar{N}}(2N + 10)) + B_{\bar{N}}(2N + 11 - B_{\bar{N}}(2N + 9)) + B_{\bar{N}}(2N + 11 - B_{\bar{N}}(2N + 8)) \\
&= B_{\bar{N}}(2N + 11 - (N + 7)) + B_{\bar{N}}(2N + 11 - (2N + 10)) + B_{\bar{N}}(2N + 11 - (2N + 9)) \\
&= B_{\bar{N}}(N + 4) + B_{\bar{N}}(1) + B_{\bar{N}}(2) = (N + 3) + 1 + 2 = \mathbf{N} + \mathbf{6} \\
&(\mathbf{N} \geq \mathbf{119})
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 12) &= B_{\bar{N}}(2N + 12 - B_{\bar{N}}(2N + 11)) + B_{\bar{N}}(2N + 12 - B_{\bar{N}}(2N + 10)) + B_{\bar{N}}(2N + 12 - B_{\bar{N}}(2N + 9)) \\
&= B_{\bar{N}}(2N + 12 - (N + 6)) + B_{\bar{N}}(2N + 12 - (N + 7)) + B_{\bar{N}}(2N + 12 - (2N + 10)) \\
&= B_{\bar{N}}(N + 6) + B_{\bar{N}}(N + 5) + B_{\bar{N}}(2) = (N + 4) + 9 + 2 = \mathbf{N} + \mathbf{15} \\
&(N \geq 11)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 13) &= B_{\bar{N}}(2N + 13 - B_{\bar{N}}(2N + 12)) + B_{\bar{N}}(2N + 13 - B_{\bar{N}}(2N + 11)) + B_{\bar{N}}(2N + 13 - B_{\bar{N}}(2N + 10)) \\
&= B_{\bar{N}}(2N + 13 - (N + 15)) + B_{\bar{N}}(2N + 13 - (N + 6)) + B_{\bar{N}}(2N + 13 - (N + 7)) \\
&= B_{\bar{N}}(N - 2) + B_{\bar{N}}(N + 7) + B_{\bar{N}}(N + 6) = (N - 2) + (N + 5) + (N + 4) = \mathbf{3N} + \mathbf{7} \\
&(N \geq 12)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 14) &= B_{\bar{N}}(2N + 14 - B_{\bar{N}}(2N + 13)) + B_{\bar{N}}(2N + 14 - B_{\bar{N}}(2N + 12)) + B_{\bar{N}}(2N + 14 - B_{\bar{N}}(2N + 11)) \\
&= B_{\bar{N}}(2N + 14 - (3N + 7)) + B_{\bar{N}}(2N + 14 - (N + 15)) + B_{\bar{N}}(2N + 14 - (N + 6)) \\
&= B_{\bar{N}}(-N + 7) + B_{\bar{N}}(N - 1) + B_{\bar{N}}(N + 8) = 0 + (N - 1) + (N + 6) = \mathbf{2N} + \mathbf{5} \\
&(N \geq 14)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 15) &= B_{\bar{N}}(2N + 15 - B_{\bar{N}}(2N + 14)) + B_{\bar{N}}(2N + 15 - B_{\bar{N}}(2N + 13)) + B_{\bar{N}}(2N + 15 - B_{\bar{N}}(2N + 12)) \\
&= B_{\bar{N}}(2N + 15 - (2N + 5)) + B_{\bar{N}}(2N + 15 - (3N + 7)) + B_{\bar{N}}(2N + 15 - (N + 15)) \\
&= B_{\bar{N}}(10) + B_{\bar{N}}(-N + 8) + B_{\bar{N}}(N) = 10 + 0 + N = \mathbf{N} + \mathbf{10} \\
&(N \geq 15)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 16) &= B_{\bar{N}}(2N + 16 - B_{\bar{N}}(2N + 15)) + B_{\bar{N}}(2N + 16 - B_{\bar{N}}(2N + 14)) + B_{\bar{N}}(2N + 16 - B_{\bar{N}}(2N + 13)) \\
&= B_{\bar{N}}(2N + 16 - (N + 10)) + B_{\bar{N}}(2N + 16 - (2N + 5)) + B_{\bar{N}}(2N + 16 - (3N + 7)) \\
&= B_{\bar{N}}(N + 6) + B_{\bar{N}}(11) + B_{\bar{N}}(-N + 9) = (N + 4) + 11 + 0 = \mathbf{N} + \mathbf{15} \\
&(N \geq 16)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 17) &= B_{\bar{N}}(2N + 17 - B_{\bar{N}}(2N + 16)) + B_{\bar{N}}(2N + 17 - B_{\bar{N}}(2N + 15)) + B_{\bar{N}}(2N + 17 - B_{\bar{N}}(2N + 14)) \\
&= B_{\bar{N}}(2N + 17 - (N + 15)) + B_{\bar{N}}(2N + 17 - (N + 10)) + B_{\bar{N}}(2N + 17 - (2N + 5)) \\
&= B_{\bar{N}}(N + 2) + B_{\bar{N}}(N + 7) + B_{\bar{N}}(12) = (N + 1) + (N + 5) + 12 = \mathbf{2N} + \mathbf{18} \\
&(N \geq 13)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(\mathbf{2N} + \mathbf{18}) &= B_{\bar{N}}(2N + 18 - B_{\bar{N}}(2N + 17)) + B_{\bar{N}}(2N + 18 - B_{\bar{N}}(2N + 16)) + B_{\bar{N}}(2N + 18 - B_{\bar{N}}(2N + 15)) \\
&= B_{\bar{N}}(2N + 18 - (2N + 18)) + B_{\bar{N}}(2N + 18 - (N + 15)) + B_{\bar{N}}(2N + 18 - (N + 10)) \\
&= B_{\bar{N}}(0) + B_{\bar{N}}(N + 3) + B_{\bar{N}}(N + 8) = 0 + (N + 2) + (N + 6) = \mathbf{2N} + \mathbf{8} \\
&(N \geq 14)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(\mathbf{2N} + \mathbf{19}) &= B_{\bar{N}}(2N + 19 - B_{\bar{N}}(2N + 18)) + B_{\bar{N}}(2N + 19 - B_{\bar{N}}(2N + 17)) + B_{\bar{N}}(2N + 19 - B_{\bar{N}}(2N + 16)) \\
&= B_{\bar{N}}(2N + 19 - (2N + 8)) + B_{\bar{N}}(2N + 19 - (2N + 18)) + B_{\bar{N}}(2N + 19 - (N + 15)) \\
&= B_{\bar{N}}(11) + B_{\bar{N}}(1) + B_{\bar{N}}(N + 4) = 11 + 1 + (N + 3) = \mathbf{N} + \mathbf{15} \\
&(N \geq 11)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(\mathbf{2N} + \mathbf{20}) &= B_{\bar{N}}(2N + 20 - B_{\bar{N}}(2N + 19)) + B_{\bar{N}}(2N + 20 - B_{\bar{N}}(2N + 18)) + B_{\bar{N}}(2N + 20 - B_{\bar{N}}(2N + 17)) \\
&= B_{\bar{N}}(2N + 20 - (N + 15)) + B_{\bar{N}}(2N + 20 - (2N + 8)) + B_{\bar{N}}(2N + 20 - (2N + 18)) \\
&= B_{\bar{N}}(N + 5) + B_{\bar{N}}(12) + B_{\bar{N}}(2) = 9 + 12 + 2 = \mathbf{23} \\
&(N \geq 13)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(\mathbf{2N} + \mathbf{21}) &= B_{\bar{N}}(2N + 21 - B_{\bar{N}}(2N + 20)) + B_{\bar{N}}(2N + 21 - B_{\bar{N}}(2N + 19)) + B_{\bar{N}}(2N + 21 - B_{\bar{N}}(2N + 18)) \\
&= B_{\bar{N}}(2N + 21 - 23) + B_{\bar{N}}(2N + 21 - (N + 15)) + B_{\bar{N}}(2N + 21 - (2N + 8)) \\
&= B_{\bar{N}}(2N - 2) + B_{\bar{N}}(N + 6) + B_{\bar{N}}(13) = N + (N + 4) + 13 = \mathbf{2N} + \mathbf{17} \\
&(N \geq 69)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(\mathbf{2N} + \mathbf{22}) &= B_{\bar{N}}(2N + 22 - B_{\bar{N}}(2N + 21)) + B_{\bar{N}}(2N + 22 - B_{\bar{N}}(2N + 20)) + B_{\bar{N}}(2N + 22 - B_{\bar{N}}(2N + 19)) \\
&= B_{\bar{N}}(2N + 22 - (2N + 17)) + B_{\bar{N}}(2N + 22 - 23) + B_{\bar{N}}(2N + 22 - (N + 15)) \\
&= B_{\bar{N}}(5) + B_{\bar{N}}(2N - 1) + B_{\bar{N}}(N + 7) = 5 + (N + 5) + (N + 5) = \mathbf{2N} + \mathbf{15} \\
&(N \geq 22)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(\mathbf{2N} + \mathbf{23}) &= B_{\bar{N}}(2N + 23 - B_{\bar{N}}(2N + 22)) + B_{\bar{N}}(2N + 23 - B_{\bar{N}}(2N + 21)) + B_{\bar{N}}(2N + 23 - B_{\bar{N}}(2N + 20)) \\
&= B_{\bar{N}}(2N + 23 - (2N + 15)) + B_{\bar{N}}(2N + 23 - (2N + 17)) + B_{\bar{N}}(2N + 23 - 23) \\
&= B_{\bar{N}}(8) + B_{\bar{N}}(6) + B_{\bar{N}}(2N) = 8 + 6 + (3N - 4) = \mathbf{3N} + \mathbf{10} \\
&(N \geq 71)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(\mathbf{2N} + \mathbf{24}) &= B_{\bar{N}}(2N + 24 - B_{\bar{N}}(2N + 23)) + B_{\bar{N}}(2N + 24 - B_{\bar{N}}(2N + 22)) + B_{\bar{N}}(2N + 24 - B_{\bar{N}}(2N + 21)) \\
&= B_{\bar{N}}(2N + 24 - (3N + 10)) + B_{\bar{N}}(2N + 24 - (2N + 15)) + B_{\bar{N}}(2N + 24 - (2N + 17)) \\
&= B_{\bar{N}}(-N + 14) + B_{\bar{N}}(9) + B_{\bar{N}}(7) = 0 + 9 + 7 = \mathbf{16} \\
&(N \geq 79)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(\mathbf{2N} + \mathbf{25}) &= B_{\bar{N}}(2N + 25 - B_{\bar{N}}(2N + 24)) + B_{\bar{N}}(2N + 25 - B_{\bar{N}}(2N + 23)) + B_{\bar{N}}(2N + 25 - B_{\bar{N}}(2N + 22)) \\
&= B_{\bar{N}}(2N + 25 - 16) + B_{\bar{N}}(2N + 25 - (3N + 10)) + B_{\bar{N}}(2N + 25 - (2N + 15)) \\
&= B_{\bar{N}}(2N + 9) + B_{\bar{N}}(-N + 15) + B_{\bar{N}}(10) = (2N + 10) + 0 + 10 = \mathbf{2N} + \mathbf{20} \\
&(N \geq 78)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(\mathbf{2N} + \mathbf{26}) &= B_{\bar{N}}(2N + 26 - B_{\bar{N}}(2N + 25)) + B_{\bar{N}}(2N + 26 - B_{\bar{N}}(2N + 24)) + B_{\bar{N}}(2N + 26 - B_{\bar{N}}(2N + 23)) \\
&= B_{\bar{N}}(2N + 26 - (2N + 20)) + B_{\bar{N}}(2N + 26 - 16) + B_{\bar{N}}(2N + 26 - (3N + 10)) \\
&= B_{\bar{N}}(6) + B_{\bar{N}}(2N + 10) + B_{\bar{N}}(-N + 16) = 6 + (N + 7) + 0 = \mathbf{N} + \mathbf{13} \\
&(\mathbf{N} \geq \mathbf{189})
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(\mathbf{2N} + \mathbf{27}) &= B_{\bar{N}}(2N + 27 - B_{\bar{N}}(2N + 26)) + B_{\bar{N}}(2N + 27 - B_{\bar{N}}(2N + 25)) + B_{\bar{N}}(2N + 27 - B_{\bar{N}}(2N + 24)) \\
&= B_{\bar{N}}(2N + 27 - (N + 13)) + B_{\bar{N}}(2N + 27 - (2N + 20)) + B_{\bar{N}}(2N + 27 - 16) \\
&= B_{\bar{N}}(N + 14) + B_{\bar{N}}(7) + B_{\bar{N}}(2N + 11) = (N + 10) + 7 + (N + 6) = \mathbf{2N} + \mathbf{23} \\
&(\mathbf{N} \geq \mathbf{196})
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(\mathbf{2N} + \mathbf{28}) &= B_{\bar{N}}(2N + 28 - B_{\bar{N}}(2N + 27)) + B_{\bar{N}}(2N + 28 - B_{\bar{N}}(2N + 26)) + B_{\bar{N}}(2N + 28 - B_{\bar{N}}(2N + 25)) \\
&= B_{\bar{N}}(2N + 28 - (2N + 23)) + B_{\bar{N}}(2N + 28 - (N + 13)) + B_{\bar{N}}(2N + 28 - (2N + 20)) \\
&= B_{\bar{N}}(5) + B_{\bar{N}}(N + 15) + B_{\bar{N}}(8) = 5 + (N + 11) + 8 = \mathbf{N} + \mathbf{24} \\
&(N \geq 15)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(\mathbf{2N} + \mathbf{29}) &= B_{\bar{N}}(2N + 29 - B_{\bar{N}}(2N + 28)) + B_{\bar{N}}(2N + 29 - B_{\bar{N}}(2N + 27)) + B_{\bar{N}}(2N + 29 - B_{\bar{N}}(2N + 26)) \\
&= B_{\bar{N}}(2N + 29 - (N + 24)) + B_{\bar{N}}(2N + 29 - (2N + 23)) + B_{\bar{N}}(2N + 29 - (N + 13)) \\
&= B_{\bar{N}}(N + 5) + B_{\bar{N}}(6) + B_{\bar{N}}(N + 16) = 9 + 6 + 17 = \mathbf{32} \\
&(N \geq 16)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(\mathbf{2N} + \mathbf{30}) &= B_{\bar{N}}(2N + 30 - B_{\bar{N}}(2N + 29)) + B_{\bar{N}}(2N + 30 - B_{\bar{N}}(2N + 28)) + B_{\bar{N}}(2N + 30 - B_{\bar{N}}(2N + 27)) \\
&= B_{\bar{N}}(2N + 30 - 32) + B_{\bar{N}}(2N + 30 - (N + 24)) + B_{\bar{N}}(2N + 30 - (2N + 23)) \\
&= B_{\bar{N}}(2N - 2) + B_{\bar{N}}(N + 6) + B_{\bar{N}}(7) = N + (N + 4) + 7 = \mathbf{2N} + \mathbf{11} \\
&(N \geq 69)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(\mathbf{2N} + \mathbf{31}) &= B_{\bar{N}}(2N + 31 - B_{\bar{N}}(2N + 30)) + B_{\bar{N}}(2N + 31 - B_{\bar{N}}(2N + 29)) + B_{\bar{N}}(2N + 31 - B_{\bar{N}}(2N + 28)) \\
&= B_{\bar{N}}(2N + 31 - (2N + 11)) + B_{\bar{N}}(2N + 31 - 32) + B_{\bar{N}}(2N + 31 - (N + 24)) \\
&= B_{\bar{N}}(20) + B_{\bar{N}}(2N - 1) + B_{\bar{N}}(N + 7) = 20 + (N + 5) + (N + 5) = \mathbf{2N} + \mathbf{30} \\
&(N \geq 20)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(\mathbf{2N} + \mathbf{32}) &= B_{\bar{N}}(2N + 32 - B_{\bar{N}}(2N + 31)) + B_{\bar{N}}(2N + 32 - B_{\bar{N}}(2N + 30)) + B_{\bar{N}}(2N + 32 - B_{\bar{N}}(2N + 29)) \\
&= B_{\bar{N}}(2N + 32 - (2N + 30)) + B_{\bar{N}}(2N + 32 - (2N + 11)) + B_{\bar{N}}(2N + 32 - 32) \\
&= B_{\bar{N}}(2) + B_{\bar{N}}(21) + B_{\bar{N}}(2N) = 2 + 21 + (3N - 4) = \mathbf{3N} + \mathbf{19} \\
&(N \geq 21)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(\mathbf{2N} + \mathbf{33}) &= B_{\bar{N}}(2N + 33 - B_{\bar{N}}(2N + 32)) + B_{\bar{N}}(2N + 33 - B_{\bar{N}}(2N + 31)) + B_{\bar{N}}(2N + 33 - B_{\bar{N}}(2N + 30)) \\
&= B_{\bar{N}}(2N + 33 - (3N + 19)) + B_{\bar{N}}(2N + 33 - (2N + 30)) + B_{\bar{N}}(2N + 33 - (2N + 11)) \\
&= B_{\bar{N}}(-N + 14) + B_{\bar{N}}(3) + B_{\bar{N}}(22) = 0 + 3 + 22 = \mathbf{25} \\
&(N \geq 22)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(\mathbf{2N} + \mathbf{34}) &= B_{\bar{N}}(2N + 34 - B_{\bar{N}}(2N + 33)) + B_{\bar{N}}(2N + 34 - B_{\bar{N}}(2N + 32)) + B_{\bar{N}}(2N + 34 - B_{\bar{N}}(2N + 31)) \\
&= B_{\bar{N}}(2N + 34 - 25) + B_{\bar{N}}(2N + 34 - (3N + 19)) + B_{\bar{N}}(2N + 34 - (2N + 30)) \\
&= B_{\bar{N}}(2N + 9) + B_{\bar{N}}(-N + 15) + B_{\bar{N}}(4) = (2N + 10) + 0 + 4 = \mathbf{2N} + \mathbf{14} \\
&(N \geq 19)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(\mathbf{2N} + \mathbf{35}) &= B_{\bar{N}}(2N + 35 - B_{\bar{N}}(2N + 34)) + B_{\bar{N}}(2N + 35 - B_{\bar{N}}(2N + 33)) + B_{\bar{N}}(2N + 35 - B_{\bar{N}}(2N + 32)) \\
&= B_{\bar{N}}(2N + 35 - (2N + 14)) + B_{\bar{N}}(2N + 35 - 25) + B_{\bar{N}}(2N + 35 - (3N + 19)) \\
&= B_{\bar{N}}(21) + B_{\bar{N}}(2N + 10) + B_{\bar{N}}(-N + 16) = 21 + (N + 7) + 0 = \mathbf{N} + \mathbf{28} \\
&(N \geq 21)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(\mathbf{2N} + \mathbf{36}) &= B_{\bar{N}}(2N + 36 - B_{\bar{N}}(2N + 35)) + B_{\bar{N}}(2N + 36 - B_{\bar{N}}(2N + 34)) + B_{\bar{N}}(2N + 36 - B_{\bar{N}}(2N + 33)) \\
&= B_{\bar{N}}(2N + 36 - (N + 28)) + B_{\bar{N}}(2N + 36 - (2N + 14)) + B_{\bar{N}}(2N + 36 - 25) \\
&= B_{\bar{N}}(N + 8) + B_{\bar{N}}(22) + B_{\bar{N}}(2N + 11) = (N + 6) + 22 + (N + 6) = \mathbf{2N} + \mathbf{34} \\
&(N \geq 22)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(\mathbf{2N} + \mathbf{37}) &= B_{\bar{N}}(2N + 37 - B_{\bar{N}}(2N + 36)) + B_{\bar{N}}(2N + 37 - B_{\bar{N}}(2N + 35)) + B_{\bar{N}}(2N + 37 - B_{\bar{N}}(2N + 34)) \\
&= B_{\bar{N}}(2N + 37 - (2N + 34)) + B_{\bar{N}}(2N + 37 - (N + 28)) + B_{\bar{N}}(2N + 37 - (2N + 14)) \\
&= B_{\bar{N}}(3) + B_{\bar{N}}(N + 9) + B_{\bar{N}}(23) = 3 + 12 + 23 = \mathbf{38} \\
&(N \geq 23)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 38) &= B_{\bar{N}}(2N + 38 - B_{\bar{N}}(2N + 37)) + B_{\bar{N}}(2N + 38 - B_{\bar{N}}(2N + 36)) + B_{\bar{N}}(2N + 38 - B_{\bar{N}}(2N + 35)) \\
&= B_{\bar{N}}(2N + 38 - 38) + B_{\bar{N}}(2N + 38 - (2N + 34)) + B_{\bar{N}}(2N + 38 - (N + 28)) \\
&= B_{\bar{N}}(2N) + B_{\bar{N}}(4) + B_{\bar{N}}(N + 10) = (3N - 4) + 4 + (N + 7) = \mathbf{4N} + \mathbf{7} \\
&(N \geq 31)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 39) &= B_{\bar{N}}(2N + 39 - B_{\bar{N}}(2N + 38)) + B_{\bar{N}}(2N + 39 - B_{\bar{N}}(2N + 37)) + B_{\bar{N}}(2N + 39 - B_{\bar{N}}(2N + 36)) \\
&= B_{\bar{N}}(2N + 39 - (4N + 7)) + B_{\bar{N}}(2N + 39 - 38) + B_{\bar{N}}(2N + 39 - (2N + 34)) \\
&= B_{\bar{N}}(-2N + 32) + B_{\bar{N}}(2N + 1) + B_{\bar{N}}(5) = 0 + (N + 2) + 5 = \mathbf{N} + \mathbf{7} \\
&(N \geq 32)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 40) &= B_{\bar{N}}(2N + 40 - B_{\bar{N}}(2N + 39)) + B_{\bar{N}}(2N + 40 - B_{\bar{N}}(2N + 38)) + B_{\bar{N}}(2N + 40 - B_{\bar{N}}(2N + 37)) \\
&= B_{\bar{N}}(2N + 40 - (N + 7)) + B_{\bar{N}}(2N + 40 - (4N + 7)) + B_{\bar{N}}(2N + 40 - 38) \\
&= B_{\bar{N}}(N + 33) + B_{\bar{N}}(-2N + 33) + B_{\bar{N}}(2N + 2) = (N + 35) + 0 + (2N - 3) = \mathbf{3N} + \mathbf{32} \\
&(N \geq 71)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 41) &= B_{\bar{N}}(2N + 41 - B_{\bar{N}}(2N + 40)) + B_{\bar{N}}(2N + 41 - B_{\bar{N}}(2N + 39)) + B_{\bar{N}}(2N + 41 - B_{\bar{N}}(2N + 38)) \\
&= B_{\bar{N}}(2N + 41 - (3N + 32)) + B_{\bar{N}}(2N + 41 - (N + 7)) + B_{\bar{N}}(2N + 41 - (4N + 7)) \\
&= B_{\bar{N}}(-N + 9) + B_{\bar{N}}(N + 34) + B_{\bar{N}}(-2N + 34) = 0 + (N + 13) + 0 = \mathbf{N} + \mathbf{13} \\
&(N \geq 70)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 42) &= B_{\bar{N}}(2N + 42 - B_{\bar{N}}(2N + 41)) + B_{\bar{N}}(2N + 42 - B_{\bar{N}}(2N + 40)) + B_{\bar{N}}(2N + 42 - B_{\bar{N}}(2N + 39)) \\
&= B_{\bar{N}}(2N + 42 - (N + 13)) + B_{\bar{N}}(2N + 42 - (3N + 32)) + B_{\bar{N}}(2N + 42 - (N + 7)) \\
&= B_{\bar{N}}(N + 29) + B_{\bar{N}}(-N + 10) + B_{\bar{N}}(N + 35) = (2N + 23) + 0 + 27 = \mathbf{2N} + \mathbf{50} \\
&(N \geq 69)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(\mathbf{2N} + \mathbf{43}) &= B_{\bar{N}}(2N + 43 - B_{\bar{N}}(2N + 42)) + B_{\bar{N}}(2N + 43 - B_{\bar{N}}(2N + 41)) + B_{\bar{N}}(2N + 43 - B_{\bar{N}}(2N + 40)) \\
&= B_{\bar{N}}(2N + 43 - (2N + 50)) + B_{\bar{N}}(2N + 43 - (N + 13)) + B_{\bar{N}}(2N + 43 - (3N + 32)) \\
&= B_{\bar{N}}(-7) + B_{\bar{N}}(N + 30) + B_{\bar{N}}(-N + 11) = 0 + (N + 9) + 0 = \mathbf{N} + \mathbf{9} \\
&(N \geq 38)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(\mathbf{2N} + \mathbf{44}) &= B_{\bar{N}}(2N + 44 - B_{\bar{N}}(2N + 43)) + B_{\bar{N}}(2N + 44 - B_{\bar{N}}(2N + 42)) + B_{\bar{N}}(2N + 44 - B_{\bar{N}}(2N + 41)) \\
&= B_{\bar{N}}(2N + 44 - (N + 9)) + B_{\bar{N}}(2N + 44 - (2N + 50)) + B_{\bar{N}}(2N + 44 - (N + 13)) \\
&= B_{\bar{N}}(N + 35) + B_{\bar{N}}(-6) + B_{\bar{N}}(N + 31) = 27 + 0 + 22 = \mathbf{49} \\
&(N \geq 39)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(\mathbf{2N} + \mathbf{45}) &= B_{\bar{N}}(2N + 45 - B_{\bar{N}}(2N + 44)) + B_{\bar{N}}(2N + 45 - B_{\bar{N}}(2N + 43)) + B_{\bar{N}}(2N + 45 - B_{\bar{N}}(2N + 42)) \\
&= B_{\bar{N}}(2N + 45 - 49) + B_{\bar{N}}(2N + 45 - (N + 9)) + B_{\bar{N}}(2N + 45 - (2N + 50)) \\
&= B_{\bar{N}}(2N - 4) + B_{\bar{N}}(N + 36) + B_{\bar{N}}(-5) = \left(\frac{15N}{7} - \frac{58}{7} \right) + 36 + 0 = \frac{\mathbf{15N}}{\mathbf{7}} + \frac{\mathbf{194}}{\mathbf{7}} \\
&(N \geq 71)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(\mathbf{2N} + \mathbf{46}) &= B_{\bar{N}}(2N + 46 - B_{\bar{N}}(2N + 45)) + B_{\bar{N}}(2N + 46 - B_{\bar{N}}(2N + 44)) + B_{\bar{N}}(2N + 46 - B_{\bar{N}}(2N + 43)) \\
&= B_{\bar{N}}\left(2N + 46 - \left(\frac{15N}{7} + \frac{194}{7}\right)\right) + B_{\bar{N}}(2N + 46 - 49) + B_{\bar{N}}(2N + 46 - (N + 9)) \\
&= B_{\bar{N}}\left(-\frac{N}{7} + \frac{128}{7}\right) + B_{\bar{N}}(2N - 3) + B_{\bar{N}}(N + 37) = 0 + (N - 2) + (N + 37) = \mathbf{2N} + \mathbf{35} \\
&(N \geq 128)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + \mathbf{47}) &= B_{\bar{N}}(2N + 47 - B_{\bar{N}}(2N + 46)) + B_{\bar{N}}(2N + 47 - B_{\bar{N}}(2N + 45)) + B_{\bar{N}}(2N + 47 - B_{\bar{N}}(2N + 44)) \\
&= B_{\bar{N}}(2N + 47 - (2N + 35)) + B_{\bar{N}}\left(2N + 47 - \left(\frac{15N}{7} + \frac{194}{7}\right)\right) + B_{\bar{N}}(2N + 47 - 49) \\
&= B_{\bar{N}}(12) + B_{\bar{N}}\left(-\frac{N}{7} + \frac{135}{7}\right) + B_{\bar{N}}(2N - 2) = 12 + 0 + N = \mathbf{N} + \mathbf{12} \\
&(N \geq 135)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + \mathbf{48}) &= B_{\bar{N}}(2N + 48 - B_{\bar{N}}(2N + 47)) + B_{\bar{N}}(2N + 48 - B_{\bar{N}}(2N + 46)) + B_{\bar{N}}(2N + 48 - B_{\bar{N}}(2N + 45)) \\
&= B_{\bar{N}}(2N + 48 - (N + 12)) + B_{\bar{N}}(2N + 48 - (2N + 35)) + B_{\bar{N}}\left(2N + 48 - \left(\frac{15N}{7} + \frac{194}{7}\right)\right) \\
&= B_{\bar{N}}(N + 36) + B_{\bar{N}}(13) + B_{\bar{N}}\left(-\frac{N}{7} + \frac{142}{7}\right) = 36 + 13 + 0 = \mathbf{49} \\
&(N \geq 142)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + \mathbf{49}) &= B_{\bar{N}}(2N + 49 - B_{\bar{N}}(2N + 48)) + B_{\bar{N}}(2N + 49 - B_{\bar{N}}(2N + 47)) + B_{\bar{N}}(2N + 49 - B_{\bar{N}}(2N + 46)) \\
&= B_{\bar{N}}(2N + 49 - 49) + B_{\bar{N}}(2N + 49 - (N + 12)) + B_{\bar{N}}(2N + 49 - (2N + 35)) \\
&= B_{\bar{N}}(2N) + B_{\bar{N}}(N + 37) + B_{\bar{N}}(14) = (3N - 4) + (N + 37) + 14 = \mathbf{4N} + \mathbf{47} \\
&(N \geq 22)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + \mathbf{50}) &= B_{\bar{N}}(2N + 50 - B_{\bar{N}}(2N + 49)) + B_{\bar{N}}(2N + 50 - B_{\bar{N}}(2N + 48)) + B_{\bar{N}}(2N + 50 - B_{\bar{N}}(2N + 47)) \\
&= B_{\bar{N}}(2N + 50 - (4N + 47)) + B_{\bar{N}}(2N + 50 - 49) + B_{\bar{N}}(2N + 50 - (N + 12)) \\
&= B_{\bar{N}}(-2N + 3) + B_{\bar{N}}(2N + 1) + B_{\bar{N}}(N + 38) = 0 + (N + 2) + (2N + 10) = \mathbf{3N} + \mathbf{12} \\
&(N \geq 17)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + \mathbf{51}) &= B_{\bar{N}}(2N + 51 - B_{\bar{N}}(2N + 50)) + B_{\bar{N}}(2N + 51 - B_{\bar{N}}(2N + 49)) + B_{\bar{N}}(2N + 51 - B_{\bar{N}}(2N + 48)) \\
&= B_{\bar{N}}(2N + 51 - (3N + 12)) + B_{\bar{N}}(2N + 51 - (4N + 47)) + B_{\bar{N}}(2N + 51 - 49) \\
&= B_{\bar{N}}(-N + 39) + B_{\bar{N}}(-2N + 4) + B_{\bar{N}}(2N + 2) = 0 + 0 + (2N - 3) = \mathbf{2N} - \mathbf{3} \\
&(N \geq 39)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + \mathbf{52}) &= B_{\bar{N}}(2N + 52 - B_{\bar{N}}(2N + 51)) + B_{\bar{N}}(2N + 52 - B_{\bar{N}}(2N + 50)) + B_{\bar{N}}(2N + 52 - B_{\bar{N}}(2N + 49)) \\
&= B_{\bar{N}}(2N + 52 - (2N - 3)) + B_{\bar{N}}(2N + 52 - (3N + 12)) + B_{\bar{N}}(2N + 52 - (4N + 47)) \\
&= B_{\bar{N}}(55) + B_{\bar{N}}(-N + 40) + B_{\bar{N}}(-2N + 5) = 55 + 0 + 0 = \mathbf{55} \\
&(N \geq 55)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + \mathbf{53}) &= B_{\bar{N}}(2N + 53 - B_{\bar{N}}(2N + 52)) + B_{\bar{N}}(2N + 53 - B_{\bar{N}}(2N + 51)) + B_{\bar{N}}(2N + 53 - B_{\bar{N}}(2N + 50)) \\
&= B_{\bar{N}}(2N + 53 - 55) + B_{\bar{N}}(2N + 53 - (2N - 3)) + B_{\bar{N}}(2N + 53 - (3N + 12)) \\
&= B_{\bar{N}}(2N - 2) + B_{\bar{N}}(56) + B_{\bar{N}}(-N + 41) = N + 56 + 0 = \mathbf{N} + \mathbf{56} \\
&(N \geq 69)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + \mathbf{54}) &= B_{\bar{N}}(2N + 54 - B_{\bar{N}}(2N + 53)) + B_{\bar{N}}(2N + 54 - B_{\bar{N}}(2N + 52)) + B_{\bar{N}}(2N + 54 - B_{\bar{N}}(2N + 51)) \\
&= B_{\bar{N}}(2N + 54 - (N + 56)) + B_{\bar{N}}(2N + 54 - 55) + B_{\bar{N}}(2N + 54 - (2N - 3)) \\
&= B_{\bar{N}}(N - 2) + B_{\bar{N}}(2N - 1) + B_{\bar{N}}(57) = (N - 2) + (N + 5) + 57 = \mathbf{2N} + \mathbf{60} \\
&(N \geq 57)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + \mathbf{55}) &= B_{\bar{N}}(2N + 55 - B_{\bar{N}}(2N + 54)) + B_{\bar{N}}(2N + 55 - B_{\bar{N}}(2N + 53)) + B_{\bar{N}}(2N + 55 - B_{\bar{N}}(2N + 52)) \\
&= B_{\bar{N}}(2N + 55 - (2N + 60)) + B_{\bar{N}}(2N + 55 - (N + 56)) + B_{\bar{N}}(2N + 55 - 55) \\
&= B_{\bar{N}}(-5) + B_{\bar{N}}(N - 1) + B_{\bar{N}}(2N) = 0 + (N - 1) + (3N - 4) = \mathbf{4N} - \mathbf{5} \\
&(N \geq 43)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 56) &= B_{\bar{N}}(2N + 56 - B_{\bar{N}}(2N + 55)) + B_{\bar{N}}(2N + 56 - B_{\bar{N}}(2N + 54)) + B_{\bar{N}}(2N + 56 - B_{\bar{N}}(2N + 53)) \\
&= B_{\bar{N}}(2N + 56 - (4N - 5)) + B_{\bar{N}}(2N + 56 - (2N + 60)) + B_{\bar{N}}(2N + 56 - (N + 56)) \\
&= B_{\bar{N}}(-2N + 61) + B_{\bar{N}}(-4) + B_{\bar{N}}(N) = 0 + 0 + N = \mathbf{N} \\
&(N \geq 44)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 57) &= B_{\bar{N}}(2N + 57 - B_{\bar{N}}(2N + 56)) + B_{\bar{N}}(2N + 57 - B_{\bar{N}}(2N + 55)) + B_{\bar{N}}(2N + 57 - B_{\bar{N}}(2N + 54)) \\
&= B_{\bar{N}}(2N + 57 - N) + B_{\bar{N}}(2N + 57 - (4N - 5)) + B_{\bar{N}}(2N + 57 - (2N + 60)) \\
&= B_{\bar{N}}(N + 57) + B_{\bar{N}}(-2N + 62) + B_{\bar{N}}(-3) = (N + 49) + 0 + 0 = \mathbf{N} + 49 \\
&(N \geq 45)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 58) &= B_{\bar{N}}(2N + 58 - B_{\bar{N}}(2N + 57)) + B_{\bar{N}}(2N + 58 - B_{\bar{N}}(2N + 56)) + B_{\bar{N}}(2N + 58 - B_{\bar{N}}(2N + 55)) \\
&= B_{\bar{N}}(2N + 58 - (N + 49)) + B_{\bar{N}}(2N + 58 - N) + B_{\bar{N}}(2N + 58 - (4N - 5)) \\
&= B_{\bar{N}}(N + 9) + B_{\bar{N}}(N + 58) + B_{\bar{N}}(-2N + 63) = 12 + (N + 60) + 0 = \mathbf{N} + 72 \\
&(N \geq 32)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 59) &= B_{\bar{N}}(2N + 59 - B_{\bar{N}}(2N + 58)) + B_{\bar{N}}(2N + 59 - B_{\bar{N}}(2N + 57)) + B_{\bar{N}}(2N + 59 - B_{\bar{N}}(2N + 56)) \\
&= B_{\bar{N}}(2N + 59 - (N + 72)) + B_{\bar{N}}(2N + 59 - (N + 49)) + B_{\bar{N}}(2N + 59 - N) \\
&= B_{\bar{N}}(N - 13) + B_{\bar{N}}(N + 10) + B_{\bar{N}}(N + 59) = (N - 13) + (N + 7) + 25 = 2\mathbf{N} + 19 \\
&(N \geq 14)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 60) &= B_{\bar{N}}(2N + 60 - B_{\bar{N}}(2N + 59)) + B_{\bar{N}}(2N + 60 - B_{\bar{N}}(2N + 58)) + B_{\bar{N}}(2N + 60 - B_{\bar{N}}(2N + 57)) \\
&= B_{\bar{N}}(2N + 60 - (2N + 19)) + B_{\bar{N}}(2N + 60 - (N + 72)) + B_{\bar{N}}(2N + 60 - (N + 49)) \\
&= B_{\bar{N}}(41) + B_{\bar{N}}(N - 12) + B_{\bar{N}}(N + 11) = 41 + (N - 12) + (N + 8) = 2\mathbf{N} + 37 \\
&(N \geq 41)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + \mathbf{61}) &= B_{\bar{N}}(2N + 61 - B_{\bar{N}}(2N + 60)) + B_{\bar{N}}(2N + 61 - B_{\bar{N}}(2N + 59)) + B_{\bar{N}}(2N + 61 - B_{\bar{N}}(2N + 58)) \\
&= B_{\bar{N}}(2N + 61 - (2N + 37)) + B_{\bar{N}}(2N + 61 - (2N + 19)) + B_{\bar{N}}(2N + 61 - (N + 72)) \\
&= B_{\bar{N}}(24) + B_{\bar{N}}(42) + B_{\bar{N}}(N - 11) = 24 + 42 + (N - 11) = \mathbf{N} + \mathbf{55} \\
&(N \geq 42)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + \mathbf{62}) &= B_{\bar{N}}(2N + 62 - B_{\bar{N}}(2N + 61)) + B_{\bar{N}}(2N + 62 - B_{\bar{N}}(2N + 60)) + B_{\bar{N}}(2N + 62 - B_{\bar{N}}(2N + 59)) \\
&= B_{\bar{N}}(2N + 62 - (N + 55)) + B_{\bar{N}}(2N + 62 - (2N + 37)) + B_{\bar{N}}(2N + 62 - (2N + 19)) \\
&= B_{\bar{N}}(N + 7) + B_{\bar{N}}(25) + B_{\bar{N}}(43) = (N + 5) + 25 + 43 = \mathbf{N} + \mathbf{73} \\
&(N \geq 43)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + \mathbf{63}) &= B_{\bar{N}}(2N + 63 - B_{\bar{N}}(2N + 62)) + B_{\bar{N}}(2N + 63 - B_{\bar{N}}(2N + 61)) + B_{\bar{N}}(2N + 63 - B_{\bar{N}}(2N + 60)) \\
&= B_{\bar{N}}(2N + 63 - (N + 73)) + B_{\bar{N}}(2N + 63 - (N + 55)) + B_{\bar{N}}(2N + 63 - (2N + 37)) \\
&= B_{\bar{N}}(N - 10) + B_{\bar{N}}(N + 8) + B_{\bar{N}}(26) = (N - 10) + (N + 6) + 26 = \mathbf{2N} + \mathbf{22} \\
&(N \geq 26)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + \mathbf{64}) &= B_{\bar{N}}(2N + 64 - B_{\bar{N}}(2N + 63)) + B_{\bar{N}}(2N + 64 - B_{\bar{N}}(2N + 62)) + B_{\bar{N}}(2N + 64 - B_{\bar{N}}(2N + 61)) \\
&= B_{\bar{N}}(2N + 64 - (2N + 22)) + B_{\bar{N}}(2N + 64 - (N + 73)) + B_{\bar{N}}(2N + 64 - (N + 55)) \\
&= B_{\bar{N}}(42) + B_{\bar{N}}(N - 9) + B_{\bar{N}}(N + 9) = 42 + (N - 9) + 12 = \mathbf{N} + \mathbf{45} \\
&(N \geq 42)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + \mathbf{65}) &= B_{\bar{N}}(2N + 65 - B_{\bar{N}}(2N + 64)) + B_{\bar{N}}(2N + 65 - B_{\bar{N}}(2N + 63)) + B_{\bar{N}}(2N + 65 - B_{\bar{N}}(2N + 62)) \\
&= B_{\bar{N}}(2N + 65 - (N + 45)) + B_{\bar{N}}(2N + 65 - (2N + 22)) + B_{\bar{N}}(2N + 65 - (N + 73)) \\
&= B_{\bar{N}}(N + 20) + B_{\bar{N}}(43) + B_{\bar{N}}(N - 8) = (N + 15) + 43 + (N - 8) = \mathbf{2N} + \mathbf{50} \\
&(N \geq 57)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + \mathbf{66}) &= B_{\bar{N}}(2N + 66 - B_{\bar{N}}(2N + 65)) + B_{\bar{N}}(2N + 66 - B_{\bar{N}}(2N + 64)) + B_{\bar{N}}(2N + 66 - B_{\bar{N}}(2N + 63)) \\
&= B_{\bar{N}}(2N + 66 - (2N + 50)) + B_{\bar{N}}(2N + 66 - (N + 45)) + B_{\bar{N}}(2N + 66 - (2N + 22)) \\
&= B_{\bar{N}}(16) + B_{\bar{N}}(N + 21) + B_{\bar{N}}(44) = 16 + (N + 16) + 44 = \mathbf{N} + \mathbf{76} \\
&(N \geq 58)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + \mathbf{67}) &= B_{\bar{N}}(2N + 67 - B_{\bar{N}}(2N + 66)) + B_{\bar{N}}(2N + 67 - B_{\bar{N}}(2N + 65)) + B_{\bar{N}}(2N + 67 - B_{\bar{N}}(2N + 64)) \\
&= B_{\bar{N}}(2N + 67 - (N + 76)) + B_{\bar{N}}(2N + 67 - (2N + 50)) + B_{\bar{N}}(2N + 67 - (N + 45)) \\
&= B_{\bar{N}}(N - 9) + B_{\bar{N}}(17) + B_{\bar{N}}(N + 22) = (N - 9) + 17 + 22 = \mathbf{N} + \mathbf{30} \\
&(N \geq 59)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + \mathbf{68}) &= B_{\bar{N}}(2N + 68 - B_{\bar{N}}(2N + 67)) + B_{\bar{N}}(2N + 68 - B_{\bar{N}}(2N + 66)) + B_{\bar{N}}(2N + 68 - B_{\bar{N}}(2N + 65)) \\
&= B_{\bar{N}}(2N + 68 - (N + 30)) + B_{\bar{N}}(2N + 68 - (N + 76)) + B_{\bar{N}}(2N + 68 - (2N + 50)) \\
&= B_{\bar{N}}(N + 38) + B_{\bar{N}}(N - 8) + B_{\bar{N}}(18) = (2N + 10) + (N - 8) + 18 = \mathbf{3N} + \mathbf{20} \\
&(N \geq 21)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + \mathbf{69}) &= B_{\bar{N}}(2N + 69 - B_{\bar{N}}(2N + 68)) + B_{\bar{N}}(2N + 69 - B_{\bar{N}}(2N + 67)) + B_{\bar{N}}(2N + 69 - B_{\bar{N}}(2N + 66)) \\
&= B_{\bar{N}}(2N + 69 - (3N + 20)) + B_{\bar{N}}(2N + 69 - (N + 30)) + B_{\bar{N}}(2N + 69 - (N + 76)) \\
&= B_{\bar{N}}(-N + 49) + B_{\bar{N}}(N + 39) + B_{\bar{N}}(N - 7) = 0 + (N + 4) + (N - 7) = \mathbf{2N} - \mathbf{3} \\
&(N \geq 49)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + \mathbf{70}) &= B_{\bar{N}}(2N + 70 - B_{\bar{N}}(2N + 69)) + B_{\bar{N}}(2N + 70 - B_{\bar{N}}(2N + 68)) + B_{\bar{N}}(2N + 70 - B_{\bar{N}}(2N + 67)) \\
&= B_{\bar{N}}(2N + 70 - (2N - 3)) + B_{\bar{N}}(2N + 70 - (3N + 20)) + B_{\bar{N}}(2N + 70 - (N + 30)) \\
&= B_{\bar{N}}(73) + B_{\bar{N}}(-N + 50) + B_{\bar{N}}(N + 40) = 73 + 0 + 39 = \mathbf{112} \\
&(N \geq 73)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(\mathbf{2N} + \mathbf{71}) &= B_{\bar{N}}(2N + 71 - B_{\bar{N}}(2N + 70)) + B_{\bar{N}}(2N + 71 - B_{\bar{N}}(2N + 69)) + B_{\bar{N}}(2N + 71 - B_{\bar{N}}(2N + 68)) \\
&= B_{\bar{N}}(2N + 71 - 112) + B_{\bar{N}}(2N + 71 - (2N - 3)) + B_{\bar{N}}(2N + 71 - (3N + 20)) \\
&= B_{\bar{N}}(2N - 41) + B_{\bar{N}}(74) + B_{\bar{N}}(-N + 51) = 7 + 74 + 0 = \mathbf{81} \\
&(N \geq 108)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(\mathbf{2N} + \mathbf{72}) &= B_{\bar{N}}(2N + 72 - B_{\bar{N}}(2N + 71)) + B_{\bar{N}}(2N + 72 - B_{\bar{N}}(2N + 70)) + B_{\bar{N}}(2N + 72 - B_{\bar{N}}(2N + 69)) \\
&= B_{\bar{N}}(2N + 72 - 81) + B_{\bar{N}}(2N + 72 - 112) + B_{\bar{N}}(2N + 72 - (2N - 3)) \\
&= B_{\bar{N}}(2N - 9) + B_{\bar{N}}(2N - 40) + B_{\bar{N}}(75) = (N - 7) + \left(\frac{16N}{7} + \frac{227}{7} \right) + 75 = \frac{\mathbf{23N}}{\mathbf{7}} + \frac{\mathbf{703}}{\mathbf{7}} \\
&(N \geq 107)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(\mathbf{2N} + \mathbf{73}) &= B_{\bar{N}}(2N + 73 - B_{\bar{N}}(2N + 72)) + B_{\bar{N}}(2N + 73 - B_{\bar{N}}(2N + 71)) + B_{\bar{N}}(2N + 73 - B_{\bar{N}}(2N + 70)) \\
&= B_{\bar{N}}\left(2N + 73 - \left(\frac{23N}{7} + \frac{703}{7}\right)\right) + B_{\bar{N}}(2N + 73 - 81) + B_{\bar{N}}(2N + 73 - 112) \\
&= B_{\bar{N}}\left(-\frac{9N}{7} - \frac{192}{7}\right) + B_{\bar{N}}(2N - 8) + B_{\bar{N}}(2N - 39) = 0 + (2N - 7) + \left(\frac{15N}{7} - \frac{93}{7}\right) = \frac{\mathbf{29N}}{\mathbf{7}} - \frac{\mathbf{142}}{\mathbf{7}} \\
&(N \geq 106)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(\mathbf{2N} + \mathbf{74}) &= B_{\bar{N}}(2N + 74 - B_{\bar{N}}(2N + 73)) + B_{\bar{N}}(2N + 74 - B_{\bar{N}}(2N + 72)) + B_{\bar{N}}(2N + 74 - B_{\bar{N}}(2N + 71)) \\
&= B_{\bar{N}}\left(2N + 74 - \left(\frac{29N}{7} - \frac{142}{7}\right)\right) + B_{\bar{N}}\left(2N + 74 - \left(\frac{23N}{7} + \frac{703}{7}\right)\right) + B_{\bar{N}}(2N + 74 - 81) \\
&= B_{\bar{N}}\left(-\frac{15N}{7} + \frac{660}{7}\right) + B_{\bar{N}}\left(-\frac{9N}{7} - \frac{185}{7}\right) + B_{\bar{N}}(2N - 7) = 0 + 0 + (2N - 5) = \mathbf{2N} - \mathbf{5} \\
&(N \geq 74)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + \mathbf{75}) &= B_{\bar{N}}(2N + 75 - B_{\bar{N}}(2N + 74)) + B_{\bar{N}}(2N + 75 - B_{\bar{N}}(2N + 73)) + B_{\bar{N}}(2N + 75 - B_{\bar{N}}(2N + 72)) \\
&= B_{\bar{N}}(2N + 75 - (2N - 5)) + B_{\bar{N}}\left(2N + 75 - \left(\frac{29N}{7} - \frac{142}{7}\right)\right) + B_{\bar{N}}\left(2N + 75 - \left(\frac{23N}{7} + \frac{703}{7}\right)\right) \\
&= B_{\bar{N}}(80) + B_{\bar{N}}\left(-\frac{15N}{7} + \frac{667}{7}\right) + B_{\bar{N}}\left(-\frac{9N}{7} - \frac{178}{7}\right) = 80 + 0 + 0 = \mathbf{80} \\
&(N \geq 80)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + \mathbf{76}) &= B_{\bar{N}}(2N + 76 - B_{\bar{N}}(2N + 75)) + B_{\bar{N}}(2N + 76 - B_{\bar{N}}(2N + 74)) + B_{\bar{N}}(2N + 76 - B_{\bar{N}}(2N + 73)) \\
&= B_{\bar{N}}(2N + 76 - 80) + B_{\bar{N}}(2N + 76 - (2N - 5)) + B_{\bar{N}}\left(2N + 76 - \left(\frac{29N}{7} - \frac{142}{7}\right)\right) \\
&= B_{\bar{N}}(2N - 4) + B_{\bar{N}}(81) + B_{\bar{N}}\left(-\frac{15N}{7} + \frac{674}{7}\right) = \left(\frac{15N}{7} - \frac{58}{7}\right) + 81 + 0 = \frac{15\mathbf{N}}{7} + \frac{509}{7} \\
&(N \geq 81)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + \mathbf{77}) &= B_{\bar{N}}(2N + 77 - B_{\bar{N}}(2N + 76)) + B_{\bar{N}}(2N + 77 - B_{\bar{N}}(2N + 75)) + B_{\bar{N}}(2N + 77 - B_{\bar{N}}(2N + 74)) \\
&= B_{\bar{N}}\left(2N + 77 - \left(\frac{15N}{7} + \frac{509}{7}\right)\right) + B_{\bar{N}}(2N + 77 - 80) + B_{\bar{N}}(2N + 77 - (2N - 5)) \\
&= B_{\bar{N}}\left(-\frac{N}{7} + \frac{30}{7}\right) + B_{\bar{N}}(2N - 3) + B_{\bar{N}}(82) = 0 + (N - 2) + 82 = \mathbf{N} + \mathbf{80} \\
&(N \geq 82)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + \mathbf{78}) &= B_{\bar{N}}(2N + 78 - B_{\bar{N}}(2N + 77)) + B_{\bar{N}}(2N + 78 - B_{\bar{N}}(2N + 76)) + B_{\bar{N}}(2N + 78 - B_{\bar{N}}(2N + 75)) \\
&= B_{\bar{N}}(2N + 78 - (N + 80)) + B_{\bar{N}}\left(2N + 78 - \left(\frac{15N}{7} + \frac{509}{7}\right)\right) + B_{\bar{N}}(2N + 78 - 80) \\
&= B_{\bar{N}}(N - 2) + B_{\bar{N}}\left(-\frac{N}{7} + \frac{37}{7}\right) + B_{\bar{N}}(2N - 2) = (N - 2) + 0 + N = \mathbf{2N} - \mathbf{2} \\
&(N \geq 69)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(\mathbf{2N} + \mathbf{79}) &= B_{\bar{N}}(2N + 79 - B_{\bar{N}}(2N + 78)) + B_{\bar{N}}(2N + 79 - B_{\bar{N}}(2N + 77)) + B_{\bar{N}}(2N + 79 - B_{\bar{N}}(2N + 76)) \\
&= B_{\bar{N}}(2N + 79 - (2N - 2)) + B_{\bar{N}}(2N + 79 - (N + 80)) + B_{\bar{N}}\left(2N + 79 - \left(\frac{15N}{7} + \frac{509}{7}\right)\right) \\
&= B_{\bar{N}}(81) + B_{\bar{N}}(N - 1) + B_{\bar{N}}\left(-\frac{N}{7} + \frac{44}{7}\right) = 81 + (N - 1) + 0 = \mathbf{N} + \mathbf{80} \\
&(N \geq 81)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(\mathbf{2N} + \mathbf{80}) &= B_{\bar{N}}(2N + 80 - B_{\bar{N}}(2N + 79)) + B_{\bar{N}}(2N + 80 - B_{\bar{N}}(2N + 78)) + B_{\bar{N}}(2N + 80 - B_{\bar{N}}(2N + 77)) \\
&= B_{\bar{N}}(2N + 80 - (N + 80)) + B_{\bar{N}}(2N + 80 - (2N - 2)) + B_{\bar{N}}(2N + 80 - (N + 80)) \\
&= B_{\bar{N}}(N) + B_{\bar{N}}(82) + B_{\bar{N}}(N) = N + 82 + N = \mathbf{2N} + \mathbf{82} \\
&(N \geq 82)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(\mathbf{2N} + \mathbf{81}) &= B_{\bar{N}}(2N + 81 - B_{\bar{N}}(2N + 80)) + B_{\bar{N}}(2N + 81 - B_{\bar{N}}(2N + 79)) + B_{\bar{N}}(2N + 81 - B_{\bar{N}}(2N + 78)) \\
&= B_{\bar{N}}(2N + 81 - (2N + 82)) + B_{\bar{N}}(2N + 81 - (N + 80)) + B_{\bar{N}}(2N + 81 - (2N - 2)) \\
&= B_{\bar{N}}(-1) + B_{\bar{N}}(N + 1) + B_{\bar{N}}(83) = 0 + 6 + 83 = \mathbf{89} \\
&(N \geq 83)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(\mathbf{2N} + \mathbf{82}) &= B_{\bar{N}}(2N + 82 - B_{\bar{N}}(2N + 81)) + B_{\bar{N}}(2N + 82 - B_{\bar{N}}(2N + 80)) + B_{\bar{N}}(2N + 82 - B_{\bar{N}}(2N + 79)) \\
&= B_{\bar{N}}(2N + 82 - 89) + B_{\bar{N}}(2N + 82 - (2N + 82)) + B_{\bar{N}}(2N + 82 - (N + 80)) \\
&= B_{\bar{N}}(2N - 7) + B_{\bar{N}}(0) + B_{\bar{N}}(N + 2) = (2N - 5) + 0 + (N + 1) = \mathbf{3N} - \mathbf{4} \\
&(N \geq 74)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(\mathbf{2N} + \mathbf{83}) &= B_{\bar{N}}(2N + 83 - B_{\bar{N}}(2N + 82)) + B_{\bar{N}}(2N + 83 - B_{\bar{N}}(2N + 81)) + B_{\bar{N}}(2N + 83 - B_{\bar{N}}(2N + 80)) \\
&= B_{\bar{N}}(2N + 83 - (3N - 4)) + B_{\bar{N}}(2N + 83 - 89) + B_{\bar{N}}(2N + 83 - (2N + 82)) \\
&= B_{\bar{N}}(-N + 87) + B_{\bar{N}}(2N - 6) + B_{\bar{N}}(1) = 0 + 7 + 1 = \mathbf{8} \\
&(N \geq 87)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 84) &= B_{\bar{N}}(2N + 84 - B_{\bar{N}}(2N + 83)) + B_{\bar{N}}(2N + 84 - B_{\bar{N}}(2N + 82)) + B_{\bar{N}}(2N + 84 - B_{\bar{N}}(2N + 81)) \\
&= B_{\bar{N}}(2N + 84 - 8) + B_{\bar{N}}(2N + 84 - (3N - 4)) + B_{\bar{N}}(2N + 84 - 89) \\
&= B_{\bar{N}}(2N + 76) + B_{\bar{N}}(-N + 88) + B_{\bar{N}}(2N - 5) = \left(\frac{15N}{7} + \frac{509}{7}\right) + 0 + \left(\frac{16N}{7} + \frac{297}{7}\right) = \frac{31N}{7} + \frac{806}{7} \\
&(N \geq 88)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 85) &= B_{\bar{N}}(2N + 85 - B_{\bar{N}}(2N + 84)) + B_{\bar{N}}(2N + 85 - B_{\bar{N}}(2N + 83)) + B_{\bar{N}}(2N + 85 - B_{\bar{N}}(2N + 82)) \\
&= B_{\bar{N}}\left(2N + 85 - \left(\frac{31N}{7} + \frac{806}{7}\right)\right) + B_{\bar{N}}(2N + 85 - 8) + B_{\bar{N}}(2N + 85 - (3N - 4)) \\
&= B_{\bar{N}}\left(-\frac{17N}{7} - \frac{211}{7}\right) + B_{\bar{N}}(2N + 77) + B_{\bar{N}}(-N + 89) = 0 + (N + 80) + 0 = \mathbf{N} + 80 \\
&(N \geq 89)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 86) &= B_{\bar{N}}(2N + 86 - B_{\bar{N}}(2N + 85)) + B_{\bar{N}}(2N + 86 - B_{\bar{N}}(2N + 84)) + B_{\bar{N}}(2N + 86 - B_{\bar{N}}(2N + 83)) \\
&= B_{\bar{N}}(2N + 86 - (N + 80)) + B_{\bar{N}}\left(2N + 86 - \left(\frac{31N}{7} + \frac{806}{7}\right)\right) + B_{\bar{N}}(2N + 86 - 8) \\
&= B_{\bar{N}}(N + 6) + B_{\bar{N}}\left(-\frac{17N}{7} - \frac{204}{7}\right) + B_{\bar{N}}(2N + 78) = (N + 4) + 0 + (2N - 2) = \mathbf{3N} + \mathbf{2} \\
&(N \geq 63)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 87) &= B_{\bar{N}}(2N + 87 - B_{\bar{N}}(2N + 86)) + B_{\bar{N}}(2N + 87 - B_{\bar{N}}(2N + 85)) + B_{\bar{N}}(2N + 87 - B_{\bar{N}}(2N + 84)) \\
&= B_{\bar{N}}(2N + 87 - (3N + 2)) + B_{\bar{N}}(2N + 87 - (N + 80)) + B_{\bar{N}}\left(2N + 87 - \left(\frac{31N}{7} + \frac{806}{7}\right)\right) \\
&= B_{\bar{N}}(-N + 85) + B_{\bar{N}}(N + 7) + B_{\bar{N}}\left(-\frac{17N}{7} - \frac{197}{7}\right) = 0 + (N + 5) + 0 = \mathbf{N} + \mathbf{5} \\
&(N \geq 85)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(\mathbf{2N} + \mathbf{88}) &= B_{\bar{N}}(2N + 88 - B_{\bar{N}}(2N + 87)) + B_{\bar{N}}(2N + 88 - B_{\bar{N}}(2N + 86)) + B_{\bar{N}}(2N + 88 - B_{\bar{N}}(2N + 85)) \\
&= B_{\bar{N}}(2N + 88 - (N + 5)) + B_{\bar{N}}(2N + 88 - (3N + 2)) + B_{\bar{N}}(2N + 88 - (N + 80)) \\
&= B_{\bar{N}}(N + 83) + B_{\bar{N}}(-N + 86) + B_{\bar{N}}(N + 8) = (N - 2) + 0 + (N + 6) = \mathbf{2N} + \mathbf{4} \\
&(N \geq 86)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(\mathbf{2N} + \mathbf{89}) &= B_{\bar{N}}(2N + 89 - B_{\bar{N}}(2N + 88)) + B_{\bar{N}}(2N + 89 - B_{\bar{N}}(2N + 87)) + B_{\bar{N}}(2N + 89 - B_{\bar{N}}(2N + 86)) \\
&= B_{\bar{N}}(2N + 89 - (2N + 4)) + B_{\bar{N}}(2N + 89 - (N + 5)) + B_{\bar{N}}(2N + 89 - (3N + 2)) \\
&= B_{\bar{N}}(85) + B_{\bar{N}}(N + 84) + B_{\bar{N}}(-N + 87) = 85 + 86 + 0 = \mathbf{171} \\
&(N \geq 87)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(\mathbf{2N} + \mathbf{90}) &= B_{\bar{N}}(2N + 90 - B_{\bar{N}}(2N + 89)) + B_{\bar{N}}(2N + 90 - B_{\bar{N}}(2N + 88)) + B_{\bar{N}}(2N + 90 - B_{\bar{N}}(2N + 87)) \\
&= B_{\bar{N}}(2N + 90 - 171) + B_{\bar{N}}(2N + 90 - (2N + 4)) + B_{\bar{N}}(2N + 90 - (N + 5)) \\
&= B_{\bar{N}}(2N - 81) + B_{\bar{N}}(86) + B_{\bar{N}}(N + 85) = \left(\frac{15N}{7} - \frac{135}{7} \right) + 86 + (N + 86) = \frac{\mathbf{22N}}{\mathbf{7}} + \frac{\mathbf{1069}}{\mathbf{7}} \\
&(N \geq 148)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(\mathbf{2N} + \mathbf{91}) &= B_{\bar{N}}(2N + 91 - B_{\bar{N}}(2N + 90)) + B_{\bar{N}}(2N + 91 - B_{\bar{N}}(2N + 89)) + B_{\bar{N}}(2N + 91 - B_{\bar{N}}(2N + 88)) \\
&= B_{\bar{N}}\left(2N + 91 - \left(\frac{22N}{7} + \frac{1069}{7}\right)\right) + B_{\bar{N}}(2N + 91 - 171) + B_{\bar{N}}(2N + 91 - (2N + 4)) \\
&= B_{\bar{N}}\left(-\frac{8N}{7} - \frac{432}{7}\right) + B_{\bar{N}}(2N - 80) + B_{\bar{N}}(87) = 0 + (N - 2) + 87 = \mathbf{N} + \mathbf{85} \\
&(N \geq 147)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(\mathbf{2N} + \mathbf{92}) &= B_{\bar{N}}(2N + 92 - B_{\bar{N}}(2N + 91)) + B_{\bar{N}}(2N + 92 - B_{\bar{N}}(2N + 90)) + B_{\bar{N}}(2N + 92 - B_{\bar{N}}(2N + 89)) \\
&= B_{\bar{N}}(2N + 92 - (N + 85)) + B_{\bar{N}}\left(2N + 92 - \left(\frac{22N}{7} + \frac{1069}{7}\right)\right) + B_{\bar{N}}(2N + 92 - 171) \\
&= B_{\bar{N}}(N + 7) + B_{\bar{N}}\left(-\frac{8N}{7} - \frac{425}{7}\right) + B_{\bar{N}}(2N - 79) = (N + 5) + 0 + (N - 77) = \mathbf{2N} - \mathbf{72} \\
&(N \geq 146)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(\mathbf{2N} + \mathbf{93}) &= B_{\bar{N}}(2N + 93 - B_{\bar{N}}(2N + 92)) + B_{\bar{N}}(2N + 93 - B_{\bar{N}}(2N + 91)) + B_{\bar{N}}(2N + 93 - B_{\bar{N}}(2N + 90)) \\
&= B_{\bar{N}}(2N + 93 - (2N - 72)) + B_{\bar{N}}(2N + 93 - (N + 85)) + B_{\bar{N}}\left(2N + 93 - \left(\frac{22N}{7} + \frac{1069}{7}\right)\right) \\
&= B_{\bar{N}}(165) + B_{\bar{N}}(N + 8) + B_{\bar{N}}\left(-\frac{8N}{7} - \frac{418}{7}\right) = 165 + (N + 6) + 0 = \mathbf{N} + \mathbf{171} \\
&(N \geq 165)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(\mathbf{2N} + \mathbf{94}) &= B_{\bar{N}}(2N + 94 - B_{\bar{N}}(2N + 93)) + B_{\bar{N}}(2N + 94 - B_{\bar{N}}(2N + 92)) + B_{\bar{N}}(2N + 94 - B_{\bar{N}}(2N + 91)) \\
&= B_{\bar{N}}(2N + 94 - (N + 171)) + B_{\bar{N}}(2N + 94 - (2N - 72)) + B_{\bar{N}}(2N + 94 - (N + 85)) \\
&= B_{\bar{N}}(N - 77) + B_{\bar{N}}(166) + B_{\bar{N}}(N + 9) = (N - 77) + 166 + 12 = \mathbf{N} + \mathbf{101} \\
&(N \geq 166)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(\mathbf{2N} + \mathbf{95}) &= B_{\bar{N}}(2N + 95 - B_{\bar{N}}(2N + 94)) + B_{\bar{N}}(2N + 95 - B_{\bar{N}}(2N + 93)) + B_{\bar{N}}(2N + 95 - B_{\bar{N}}(2N + 92)) \\
&= B_{\bar{N}}(2N + 95 - (N + 101)) + B_{\bar{N}}(2N + 95 - (N + 171)) + B_{\bar{N}}(2N + 95 - (2N - 72)) \\
&= B_{\bar{N}}(N - 6) + B_{\bar{N}}(N - 76) + B_{\bar{N}}(167) = (N - 6) + (N - 76) + 167 = \mathbf{2N} + \mathbf{85} \\
&(N \geq 167)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(\mathbf{2N} + \mathbf{96}) &= B_{\bar{N}}(2N + 96 - B_{\bar{N}}(2N + 95)) + B_{\bar{N}}(2N + 96 - B_{\bar{N}}(2N + 94)) + B_{\bar{N}}(2N + 96 - B_{\bar{N}}(2N + 93)) \\
&= B_{\bar{N}}(2N + 96 - (2N + 85)) + B_{\bar{N}}(2N + 96 - (N + 101)) + B_{\bar{N}}(2N + 96 - (N + 171)) \\
&= B_{\bar{N}}(11) + B_{\bar{N}}(N - 5) + B_{\bar{N}}(N - 75) = 11 + (N - 5) + (N - 75) = \mathbf{2N} - \mathbf{69} \\
&(N \geq 76)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(\mathbf{2N} + \mathbf{97}) &= B_{\bar{N}}(2N + 97 - B_{\bar{N}}(2N + 96)) + B_{\bar{N}}(2N + 97 - B_{\bar{N}}(2N + 95)) + B_{\bar{N}}(2N + 97 - B_{\bar{N}}(2N + 94)) \\
&= B_{\bar{N}}(2N + 97 - (2N - 69)) + B_{\bar{N}}(2N + 97 - (2N + 85)) + B_{\bar{N}}(2N + 97 - (N + 101)) \\
&= B_{\bar{N}}(166) + B_{\bar{N}}(12) + B_{\bar{N}}(N - 4) = 166 + 12 + (N - 4) = \mathbf{N} + \mathbf{174} \\
&(N \geq 166)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(\mathbf{2N} + \mathbf{98}) &= B_{\bar{N}}(2N + 98 - B_{\bar{N}}(2N + 97)) + B_{\bar{N}}(2N + 98 - B_{\bar{N}}(2N + 96)) + B_{\bar{N}}(2N + 98 - B_{\bar{N}}(2N + 95)) \\
&= B_{\bar{N}}(2N + 98 - (N + 174)) + B_{\bar{N}}(2N + 98 - (2N - 69)) + B_{\bar{N}}(2N + 98 - (2N + 85)) \\
&= B_{\bar{N}}(N - 76) + B_{\bar{N}}(167) + B_{\bar{N}}(13) = (N - 76) + 167 + 13 = \mathbf{N} + \mathbf{104} \\
&(N \geq 167)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(\mathbf{2N} + \mathbf{99}) &= B_{\bar{N}}(2N + 99 - B_{\bar{N}}(2N + 98)) + B_{\bar{N}}(2N + 99 - B_{\bar{N}}(2N + 97)) + B_{\bar{N}}(2N + 99 - B_{\bar{N}}(2N + 96)) \\
&= B_{\bar{N}}(2N + 99 - (N + 104)) + B_{\bar{N}}(2N + 99 - (N + 174)) + B_{\bar{N}}(2N + 99 - (2N - 69)) \\
&= B_{\bar{N}}(N - 5) + B_{\bar{N}}(N - 75) + B_{\bar{N}}(168) = (N - 5) + (N - 75) + 168 = \mathbf{2N} + \mathbf{88} \\
&(N \geq 168)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(\mathbf{2N} + \mathbf{100}) &= B_{\bar{N}}(2N + 100 - B_{\bar{N}}(2N + 99)) + B_{\bar{N}}(2N + 100 - B_{\bar{N}}(2N + 98)) + B_{\bar{N}}(2N + 100 - B_{\bar{N}}(2N + 97)) \\
&= B_{\bar{N}}(2N + 100 - (2N + 88)) + B_{\bar{N}}(2N + 100 - (N + 104)) + B_{\bar{N}}(2N + 100 - (N + 174)) \\
&= B_{\bar{N}}(12) + B_{\bar{N}}(N - 4) + B_{\bar{N}}(N - 74) = 12 + (N - 4) + (N - 74) = \mathbf{2N} - \mathbf{66} \\
&(N \geq 75)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 101) &= B_{\bar{N}}(2N + 101 - B_{\bar{N}}(2N + 100)) + B_{\bar{N}}(2N + 101 - B_{\bar{N}}(2N + 99)) + B_{\bar{N}}(2N + 101 - B_{\bar{N}}(2N + 98)) \\
&= B_{\bar{N}}(2N + 101 - (2N - 66)) + B_{\bar{N}}(2N + 101 - (2N + 88)) + B_{\bar{N}}(2N + 101 - (N + 104)) \\
&= B_{\bar{N}}(167) + B_{\bar{N}}(13) + B_{\bar{N}}(N - 3) = 167 + 13 + (N - 3) = \mathbf{N} + \mathbf{177} \\
&(N \geq 167)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 102) &= B_{\bar{N}}(2N + 102 - B_{\bar{N}}(2N + 101)) + B_{\bar{N}}(2N + 102 - B_{\bar{N}}(2N + 100)) + B_{\bar{N}}(2N + 102 - B_{\bar{N}}(2N + 99)) \\
&= B_{\bar{N}}(2N + 102 - (N + 177)) + B_{\bar{N}}(2N + 102 - (2N - 66)) + B_{\bar{N}}(2N + 102 - (2N + 88)) \\
&= B_{\bar{N}}(N - 75) + B_{\bar{N}}(168) + B_{\bar{N}}(14) = (N - 75) + 168 + 14 = \mathbf{N} + \mathbf{107} \\
&(N \geq 168)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 103) &= B_{\bar{N}}(2N + 103 - B_{\bar{N}}(2N + 102)) + B_{\bar{N}}(2N + 103 - B_{\bar{N}}(2N + 101)) + B_{\bar{N}}(2N + 103 - B_{\bar{N}}(2N + 100)) \\
&= B_{\bar{N}}(2N + 103 - (N + 107)) + B_{\bar{N}}(2N + 103 - (N + 177)) + B_{\bar{N}}(2N + 103 - (2N - 66)) \\
&= B_{\bar{N}}(N - 4) + B_{\bar{N}}(N - 74) + B_{\bar{N}}(169) = (N - 4) + (N - 74) + 169 = \mathbf{2N} + \mathbf{91} \\
&(N \geq 169)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 104) &= B_{\bar{N}}(2N + 104 - B_{\bar{N}}(2N + 103)) + B_{\bar{N}}(2N + 104 - B_{\bar{N}}(2N + 102)) + B_{\bar{N}}(2N + 104 - B_{\bar{N}}(2N + 101)) \\
&= B_{\bar{N}}(2N + 104 - (2N + 91)) + B_{\bar{N}}(2N + 104 - (N + 107)) + B_{\bar{N}}(2N + 104 - (N + 177)) \\
&= B_{\bar{N}}(13) + B_{\bar{N}}(N - 3) + B_{\bar{N}}(N - 73) = 13 + (N - 3) + (N - 73) = \mathbf{2N} - \mathbf{63} \\
&(N \geq 96)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 105) &= B_{\bar{N}}(2N + 105 - B_{\bar{N}}(2N + 104)) + B_{\bar{N}}(2N + 105 - B_{\bar{N}}(2N + 103)) + B_{\bar{N}}(2N + 105 - B_{\bar{N}}(2N + 102)) \\
&= B_{\bar{N}}(2N + 105 - (2N - 63)) + B_{\bar{N}}(2N + 105 - (2N + 91)) + B_{\bar{N}}(2N + 105 - (N + 107)) \\
&= B_{\bar{N}}(168) + B_{\bar{N}}(14) + B_{\bar{N}}(N - 2) = 168 + 14 + (N - 2) = \mathbf{N} + \mathbf{180} \\
&(N \geq 168)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 106) &= B_{\bar{N}}(2N + 106 - B_{\bar{N}}(2N + 105)) + B_{\bar{N}}(2N + 106 - B_{\bar{N}}(2N + 104)) + B_{\bar{N}}(2N + 106 - B_{\bar{N}}(2N + 103)) \\
&= B_{\bar{N}}(2N + 106 - (N + 180)) + B_{\bar{N}}(2N + 106 - (2N - 63)) + B_{\bar{N}}(2N + 106 - (2N + 91)) \\
&= B_{\bar{N}}(N - 74) + B_{\bar{N}}(169) + B_{\bar{N}}(15) = (N - 74) + 169 + 15 = \mathbf{N} + \mathbf{110} \\
&(N \geq 169)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 107) &= B_{\bar{N}}(2N + 107 - B_{\bar{N}}(2N + 106)) + B_{\bar{N}}(2N + 107 - B_{\bar{N}}(2N + 105)) + B_{\bar{N}}(2N + 107 - B_{\bar{N}}(2N + 104)) \\
&= B_{\bar{N}}(2N + 107 - (N + 110)) + B_{\bar{N}}(2N + 107 - (N + 180)) + B_{\bar{N}}(2N + 107 - (2N - 63)) \\
&= B_{\bar{N}}(N - 3) + B_{\bar{N}}(N - 73) + B_{\bar{N}}(170) = (N - 3) + (N - 73) + 170 = \mathbf{2N} + \mathbf{94} \\
&(N \geq 170)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 108) &= B_{\bar{N}}(2N + 108 - B_{\bar{N}}(2N + 107)) + B_{\bar{N}}(2N + 108 - B_{\bar{N}}(2N + 106)) + B_{\bar{N}}(2N + 108 - B_{\bar{N}}(2N + 105)) \\
&= B_{\bar{N}}(2N + 108 - (2N + 94)) + B_{\bar{N}}(2N + 108 - (N + 110)) + B_{\bar{N}}(2N + 108 - (N + 180)) \\
&= B_{\bar{N}}(14) + B_{\bar{N}}(N - 2) + B_{\bar{N}}(N - 72) = 14 + (N - 2) + (N - 72) = \mathbf{2N} - \mathbf{60} \\
&(N \geq 111)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 109) &= B_{\bar{N}}(2N + 109 - B_{\bar{N}}(2N + 108)) + B_{\bar{N}}(2N + 109 - B_{\bar{N}}(2N + 107)) + B_{\bar{N}}(2N + 109 - B_{\bar{N}}(2N + 106)) \\
&= B_{\bar{N}}(2N + 109 - (2N - 60)) + B_{\bar{N}}(2N + 109 - (2N + 94)) + B_{\bar{N}}(2N + 109 - (N + 110)) \\
&= B_{\bar{N}}(169) + B_{\bar{N}}(15) + B_{\bar{N}}(N - 1) = 169 + 15 + (N - 1) = \mathbf{N} + \mathbf{183} \\
&(N \geq 169)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 110) &= B_{\bar{N}}(2N + 110 - B_{\bar{N}}(2N + 109)) + B_{\bar{N}}(2N + 110 - B_{\bar{N}}(2N + 108)) + B_{\bar{N}}(2N + 110 - B_{\bar{N}}(2N + 107)) \\
&= B_{\bar{N}}(2N + 110 - (N + 183)) + B_{\bar{N}}(2N + 110 - (2N - 60)) + B_{\bar{N}}(2N + 110 - (2N + 94)) \\
&= B_{\bar{N}}(N - 73) + B_{\bar{N}}(170) + B_{\bar{N}}(16) = (N - 73) + 170 + 16 = \mathbf{N} + \mathbf{113} \\
&(N \geq 170)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 111) &= B_{\bar{N}}(2N + 111 - B_{\bar{N}}(2N + 110)) + B_{\bar{N}}(2N + 111 - B_{\bar{N}}(2N + 109)) + B_{\bar{N}}(2N + 111 - B_{\bar{N}}(2N + 108)) \\
&= B_{\bar{N}}(2N + 111 - (N + 113)) + B_{\bar{N}}(2N + 111 - (N + 183)) + B_{\bar{N}}(2N + 111 - (2N - 60)) \\
&= B_{\bar{N}}(N - 2) + B_{\bar{N}}(N - 72) + B_{\bar{N}}(171) = (N - 2) + (N - 72) + 171 = \mathbf{2N} + \mathbf{97} \\
&(N \geq 171)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 112) &= B_{\bar{N}}(2N + 112 - B_{\bar{N}}(2N + 111)) + B_{\bar{N}}(2N + 112 - B_{\bar{N}}(2N + 110)) + B_{\bar{N}}(2N + 112 - B_{\bar{N}}(2N + 109)) \\
&= B_{\bar{N}}(2N + 112 - (2N + 97)) + B_{\bar{N}}(2N + 112 - (N + 113)) + B_{\bar{N}}(2N + 112 - (N + 183)) \\
&= B_{\bar{N}}(15) + B_{\bar{N}}(N - 1) + B_{\bar{N}}(N - 71) = 15 + (N - 1) + (N - 71) = \mathbf{2N} - \mathbf{57} \\
&(N \geq 72)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 113) &= B_{\bar{N}}(2N + 113 - B_{\bar{N}}(2N + 112)) + B_{\bar{N}}(2N + 113 - B_{\bar{N}}(2N + 111)) + B_{\bar{N}}(2N + 113 - B_{\bar{N}}(2N + 110)) \\
&= B_{\bar{N}}(2N + 113 - (2N - 57)) + B_{\bar{N}}(2N + 113 - (2N + 97)) + B_{\bar{N}}(2N + 113 - (N + 113)) \\
&= B_{\bar{N}}(170) + B_{\bar{N}}(16) + B_{\bar{N}}(N) = 170 + 16 + N = \mathbf{N} + \mathbf{186} \\
&(N \geq 170)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 114) &= B_{\bar{N}}(2N + 114 - B_{\bar{N}}(2N + 113)) + B_{\bar{N}}(2N + 114 - B_{\bar{N}}(2N + 112)) + B_{\bar{N}}(2N + 114 - B_{\bar{N}}(2N + 111)) \\
&= B_{\bar{N}}(2N + 114 - (N + 186)) + B_{\bar{N}}(2N + 114 - (2N - 57)) + B_{\bar{N}}(2N + 114 - (2N + 97)) \\
&= B_{\bar{N}}(N - 72) + B_{\bar{N}}(171) + B_{\bar{N}}(17) = (N - 72) + 171 + 17 = \mathbf{N} + \mathbf{116} \\
&(N \geq 171)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 115) &= B_{\bar{N}}(2N + 115 - B_{\bar{N}}(2N + 114)) + B_{\bar{N}}(2N + 115 - B_{\bar{N}}(2N + 113)) + B_{\bar{N}}(2N + 115 - B_{\bar{N}}(2N + 112)) \\
&= B_{\bar{N}}(2N + 115 - (N + 116)) + B_{\bar{N}}(2N + 115 - (N + 186)) + B_{\bar{N}}(2N + 115 - (2N - 57)) \\
&= B_{\bar{N}}(N - 1) + B_{\bar{N}}(N - 71) + B_{\bar{N}}(172) = (N - 1) + (N - 71) + 172 = \mathbf{2N} + \mathbf{100} \\
&(N \geq 172)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 116) &= B_{\bar{N}}(2N + 116 - B_{\bar{N}}(2N + 115)) + B_{\bar{N}}(2N + 116 - B_{\bar{N}}(2N + 114)) + B_{\bar{N}}(2N + 116 - B_{\bar{N}}(2N + 113)) \\
&= B_{\bar{N}}(2N + 116 - (2N + 100)) + B_{\bar{N}}(2N + 116 - (N + 116)) + B_{\bar{N}}(2N + 116 - (N + 186)) \\
&= B_{\bar{N}}(16) + B_{\bar{N}}(N) + B_{\bar{N}}(N - 70) = 16 + N + (N - 70) = \mathbf{2N - 54} \\
&(N \geq 71)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 117) &= B_{\bar{N}}(2N + 117 - B_{\bar{N}}(2N + 116)) + B_{\bar{N}}(2N + 117 - B_{\bar{N}}(2N + 115)) + B_{\bar{N}}(2N + 117 - B_{\bar{N}}(2N + 114)) \\
&= B_{\bar{N}}(2N + 117 - (2N - 54)) + B_{\bar{N}}(2N + 117 - (2N + 100)) + B_{\bar{N}}(2N + 117 - (N + 116)) \\
&= B_{\bar{N}}(171) + B_{\bar{N}}(17) + B_{\bar{N}}(N + 1) = 171 + 17 + 6 = \mathbf{194} \\
&(N \geq 171)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 118) &= B_{\bar{N}}(2N + 118 - B_{\bar{N}}(2N + 117)) + B_{\bar{N}}(2N + 118 - B_{\bar{N}}(2N + 116)) + B_{\bar{N}}(2N + 118 - B_{\bar{N}}(2N + 115)) \\
&= B_{\bar{N}}(2N + 118 - 194) + B_{\bar{N}}(2N + 118 - (2N - 54)) + B_{\bar{N}}(2N + 118 - (2N + 100)) \\
&= B_{\bar{N}}(2N - 76) + B_{\bar{N}}(172) + B_{\bar{N}}(18) = 7 + 172 + 18 = \mathbf{197} \\
&(N \geq 172)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 119) &= B_{\bar{N}}(2N + 119 - B_{\bar{N}}(2N + 118)) + B_{\bar{N}}(2N + 119 - B_{\bar{N}}(2N + 117)) + B_{\bar{N}}(2N + 119 - B_{\bar{N}}(2N + 116)) \\
&= B_{\bar{N}}(2N + 119 - 197) + B_{\bar{N}}(2N + 119 - 194) + B_{\bar{N}}(2N + 119 - (2N - 54)) \\
&= B_{\bar{N}}(2N - 78) + B_{\bar{N}}(2N - 75) + B_{\bar{N}}(173) = (2N - 77) + \left(\frac{16N}{7} + \frac{157}{7} \right) + 173 = \frac{30\mathbf{N}}{7} + \frac{829}{7} \\
&(N \geq 173)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 120) &= B_{\bar{N}}(2N + 120 - B_{\bar{N}}(2N + 119)) + B_{\bar{N}}(2N + 120 - B_{\bar{N}}(2N + 118)) + B_{\bar{N}}(2N + 120 - B_{\bar{N}}(2N + 117)) \\
&= B_{\bar{N}}\left(2N + 120 - \left(\frac{30N}{7} + \frac{829}{7}\right)\right) + B_{\bar{N}}(2N + 120 - 197) + B_{\bar{N}}(2N + 120 - 194) \\
&= B_{\bar{N}}\left(-\frac{16N}{7} + \frac{11}{7}\right) + B_{\bar{N}}(2N - 77) + B_{\bar{N}}(2N - 74) = 0 + (2N - 75) + \left(\frac{15N}{7} - \frac{128}{7}\right) = \frac{29\mathbf{N}}{7} - \frac{653}{7} \\
&(N \geq 144)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(\mathbf{2N} + \mathbf{121}) &= B_{\bar{N}}(2N + 121 - B_{\bar{N}}(2N + 120)) + B_{\bar{N}}(2N + 121 - B_{\bar{N}}(2N + 119)) + B_{\bar{N}}(2N + 121 - B_{\bar{N}}(2N + 118)) \\
&= B_{\bar{N}}\left(2N + 121 - \left(\frac{29N}{7} - \frac{653}{7}\right)\right) + B_{\bar{N}}\left(2N + 121 - \left(\frac{30N}{7} + \frac{829}{7}\right)\right) + B_{\bar{N}}(2N + 121 - 197) \\
&= B_{\bar{N}}\left(-\frac{15N}{7} + \frac{1500}{7}\right) + B_{\bar{N}}\left(-\frac{16N}{7} + \frac{18}{7}\right) + B_{\bar{N}}(2N - 76) = 0 + 0 + 7 = \mathbf{7} \\
&(N \geq 143)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(\mathbf{2N} + \mathbf{122}) &= B_{\bar{N}}(2N + 122 - B_{\bar{N}}(2N + 121)) + B_{\bar{N}}(2N + 122 - B_{\bar{N}}(2N + 120)) + B_{\bar{N}}(2N + 122 - B_{\bar{N}}(2N + 119)) \\
&= B_{\bar{N}}(2N + 122 - 7) + B_{\bar{N}}\left(2N + 122 - \left(\frac{29N}{7} - \frac{653}{7}\right)\right) + B_{\bar{N}}\left(2N + 122 - \left(\frac{30N}{7} + \frac{829}{7}\right)\right) \\
&= B_{\bar{N}}(2N + 115) + B_{\bar{N}}\left(-\frac{15N}{7} + \frac{1507}{7}\right) + B_{\bar{N}}\left(-\frac{16N}{7} + \frac{25}{7}\right) = (2N + 100) + 0 + 0 = \mathbf{2N} + \mathbf{100} \\
&(N \geq 101)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(\mathbf{2N} + \mathbf{123}) &= B_{\bar{N}}(2N + 123 - B_{\bar{N}}(2N + 122)) + B_{\bar{N}}(2N + 123 - B_{\bar{N}}(2N + 121)) + B_{\bar{N}}(2N + 123 - B_{\bar{N}}(2N + 120)) \\
&= B_{\bar{N}}(2N + 123 - (2N + 100)) + B_{\bar{N}}(2N + 123 - 7) + B_{\bar{N}}\left(2N + 123 - \left(\frac{29N}{7} - \frac{653}{7}\right)\right) \\
&= B_{\bar{N}}(23) + B_{\bar{N}}(2N + 116) + B_{\bar{N}}\left(-\frac{15N}{7} + \frac{1514}{7}\right) = 23 + (2N - 54) + 0 = \mathbf{2N} - \mathbf{31} \\
&(N \geq 101)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(\mathbf{2N} + \mathbf{124}) &= B_{\bar{N}}(2N + 124 - B_{\bar{N}}(2N + 123)) + B_{\bar{N}}(2N + 124 - B_{\bar{N}}(2N + 122)) + B_{\bar{N}}(2N + 124 - B_{\bar{N}}(2N + 121)) \\
&= B_{\bar{N}}(2N + 124 - (2N - 31)) + B_{\bar{N}}(2N + 124 - (2N + 100)) + B_{\bar{N}}(2N + 124 - 7) \\
&= B_{\bar{N}}(155) + B_{\bar{N}}(24) + B_{\bar{N}}(2N + 117) = 155 + 24 + 194 = \mathbf{373} \\
&(N \geq 155)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 125) &= B_{\bar{N}}(2N + 125 - B_{\bar{N}}(2N + 124)) + B_{\bar{N}}(2N + 125 - B_{\bar{N}}(2N + 123)) + B_{\bar{N}}(2N + 125 - B_{\bar{N}}(2N + 122)) \\
&= B_{\bar{N}}(2N + 125 - 373) + B_{\bar{N}}(2N + 125 - (2N - 31)) + B_{\bar{N}}(2N + 125 - (2N + 100)) \\
&= B_{\bar{N}}(2N - 248) + B_{\bar{N}}(156) + B_{\bar{N}}(25) = (N - 2) + 156 + 25 = \mathbf{N} + \mathbf{179} \\
&(\mathbf{N} \geq \mathbf{315})
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 126) &= B_{\bar{N}}(2N + 126 - B_{\bar{N}}(2N + 125)) + B_{\bar{N}}(2N + 126 - B_{\bar{N}}(2N + 124)) + B_{\bar{N}}(2N + 126 - B_{\bar{N}}(2N + 123)) \\
&= B_{\bar{N}}(2N + 126 - (N + 179)) + B_{\bar{N}}(2N + 126 - 373) + B_{\bar{N}}(2N + 126 - (2N - 31)) \\
&= B_{\bar{N}}(N - 53) + B_{\bar{N}}(2N - 247) + B_{\bar{N}}(157) = (N - 53) + (N - 245) + 157 = \mathbf{2N} - \mathbf{141} \\
&(N \geq 314)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 127) &= B_{\bar{N}}(2N + 127 - B_{\bar{N}}(2N + 126)) + B_{\bar{N}}(2N + 127 - B_{\bar{N}}(2N + 125)) + B_{\bar{N}}(2N + 127 - B_{\bar{N}}(2N + 124)) \\
&= B_{\bar{N}}(2N + 127 - (2N - 141)) + B_{\bar{N}}(2N + 127 - (N + 179)) + B_{\bar{N}}(2N + 127 - 373) \\
&= B_{\bar{N}}(268) + B_{\bar{N}}(N - 52) + B_{\bar{N}}(2N - 246) = 268 + (N - 52) + (2N - 245) = \mathbf{3N} - \mathbf{29} \\
&(N \geq 313)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 128) &= B_{\bar{N}}(2N + 128 - B_{\bar{N}}(2N + 127)) + B_{\bar{N}}(2N + 128 - B_{\bar{N}}(2N + 126)) + B_{\bar{N}}(2N + 128 - B_{\bar{N}}(2N + 125)) \\
&= B_{\bar{N}}(2N + 128 - (3N - 29)) + B_{\bar{N}}(2N + 128 - (2N - 141)) + B_{\bar{N}}(2N + 128 - (N + 179)) \\
&= B_{\bar{N}}(-N + 157) + B_{\bar{N}}(269) + B_{\bar{N}}(N - 51) = 0 + 269 + (N - 51) = \mathbf{N} + \mathbf{218} \\
&(N \geq 269)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 129) &= B_{\bar{N}}(2N + 129 - B_{\bar{N}}(2N + 128)) + B_{\bar{N}}(2N + 129 - B_{\bar{N}}(2N + 127)) + B_{\bar{N}}(2N + 129 - B_{\bar{N}}(2N + 126)) \\
&= B_{\bar{N}}(2N + 129 - (N + 218)) + B_{\bar{N}}(2N + 129 - (3N - 29)) + B_{\bar{N}}(2N + 129 - (2N - 141)) \\
&= B_{\bar{N}}(N - 89) + B_{\bar{N}}(-N + 158) + B_{\bar{N}}(270) = (N - 89) + 0 + 270 = \mathbf{N} + \mathbf{181} \\
&(N \geq 270)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 130) &= B_{\bar{N}}(2N + 130 - B_{\bar{N}}(2N + 129)) + B_{\bar{N}}(2N + 130 - B_{\bar{N}}(2N + 128)) + B_{\bar{N}}(2N + 130 - B_{\bar{N}}(2N + 127)) \\
&= B_{\bar{N}}(2N + 130 - (N + 181)) + B_{\bar{N}}(2N + 130 - (N + 218)) + B_{\bar{N}}(2N + 130 - (3N - 29)) \\
&= B_{\bar{N}}(N - 51) + B_{\bar{N}}(N - 88) + B_{\bar{N}}(-N + 159) = (N - 51) + (N - 88) + 0 = \mathbf{2N} - \mathbf{139} \\
&(N \geq 159)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 131) &= B_{\bar{N}}(2N + 131 - B_{\bar{N}}(2N + 130)) + B_{\bar{N}}(2N + 131 - B_{\bar{N}}(2N + 129)) + B_{\bar{N}}(2N + 131 - B_{\bar{N}}(2N + 128)) \\
&= B_{\bar{N}}(2N + 131 - (2N - 139)) + B_{\bar{N}}(2N + 131 - (N + 181)) + B_{\bar{N}}(2N + 131 - (N + 218)) \\
&= B_{\bar{N}}(270) + B_{\bar{N}}(N - 50) + B_{\bar{N}}(N - 87) = 270 + (N - 50) + (N - 87) = \mathbf{2N} + \mathbf{133} \\
&(N \geq 270)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 132) &= B_{\bar{N}}(2N + 132 - B_{\bar{N}}(2N + 131)) + B_{\bar{N}}(2N + 132 - B_{\bar{N}}(2N + 130)) + B_{\bar{N}}(2N + 132 - B_{\bar{N}}(2N + 129)) \\
&= B_{\bar{N}}(2N + 132 - (2N + 133)) + B_{\bar{N}}(2N + 132 - (2N - 139)) + B_{\bar{N}}(2N + 132 - (N + 181)) \\
&= B_{\bar{N}}(-1) + B_{\bar{N}}(271) + B_{\bar{N}}(N - 49) = 0 + 271 + (N - 49) = \mathbf{N} + \mathbf{222} \\
&(N \geq 271)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 133) &= B_{\bar{N}}(2N + 133 - B_{\bar{N}}(2N + 132)) + B_{\bar{N}}(2N + 133 - B_{\bar{N}}(2N + 131)) + B_{\bar{N}}(2N + 133 - B_{\bar{N}}(2N + 130)) \\
&= B_{\bar{N}}(2N + 133 - (N + 222)) + B_{\bar{N}}(2N + 133 - (2N + 133)) + B_{\bar{N}}(2N + 133 - (2N - 139)) \\
&= B_{\bar{N}}(N - 89) + B_{\bar{N}}(0) + B_{\bar{N}}(272) = (N - 89) + 0 + 272 = \mathbf{N} + \mathbf{183} \\
&(N \geq 272)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 134) &= B_{\bar{N}}(2N + 134 - B_{\bar{N}}(2N + 133)) + B_{\bar{N}}(2N + 134 - B_{\bar{N}}(2N + 132)) + B_{\bar{N}}(2N + 134 - B_{\bar{N}}(2N + 131)) \\
&= B_{\bar{N}}(2N + 134 - (N + 183)) + B_{\bar{N}}(2N + 134 - (N + 222)) + B_{\bar{N}}(2N + 134 - (2N + 133)) \\
&= B_{\bar{N}}(N - 49) + B_{\bar{N}}(N - 88) + B_{\bar{N}}(1) = (N - 49) + (N - 88) + 1 = \mathbf{2N} - \mathbf{136} \\
&(N \geq 111)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 135) &= B_{\bar{N}}(2N + 135 - B_{\bar{N}}(2N + 134)) + B_{\bar{N}}(2N + 135 - B_{\bar{N}}(2N + 133)) + B_{\bar{N}}(2N + 135 - B_{\bar{N}}(2N + 132)) \\
&= B_{\bar{N}}(2N + 135 - (2N - 136)) + B_{\bar{N}}(2N + 135 - (N + 183)) + B_{\bar{N}}(2N + 135 - (N + 222)) \\
&= B_{\bar{N}}(271) + B_{\bar{N}}(N - 48) + B_{\bar{N}}(N - 87) = 271 + (N - 48) + (N - 87) = \mathbf{2N} + \mathbf{136} \\
&(N \geq 271)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 136) &= B_{\bar{N}}(2N + 136 - B_{\bar{N}}(2N + 135)) + B_{\bar{N}}(2N + 136 - B_{\bar{N}}(2N + 134)) + B_{\bar{N}}(2N + 136 - B_{\bar{N}}(2N + 133)) \\
&= B_{\bar{N}}(2N + 136 - (2N + 136)) + B_{\bar{N}}(2N + 136 - (2N - 136)) + B_{\bar{N}}(2N + 136 - (N + 183)) \\
&= B_{\bar{N}}(0) + B_{\bar{N}}(272) + B_{\bar{N}}(N - 47) = 0 + 272 + (N - 47) = \mathbf{N} + \mathbf{225} \\
&(N \geq 272)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 137) &= B_{\bar{N}}(2N + 137 - B_{\bar{N}}(2N + 136)) + B_{\bar{N}}(2N + 137 - B_{\bar{N}}(2N + 135)) + B_{\bar{N}}(2N + 137 - B_{\bar{N}}(2N + 134)) \\
&= B_{\bar{N}}(2N + 137 - (N + 225)) + B_{\bar{N}}(2N + 137 - (2N + 136)) + B_{\bar{N}}(2N + 137 - (2N - 136)) \\
&= B_{\bar{N}}(N - 88) + B_{\bar{N}}(1) + B_{\bar{N}}(273) = (N - 88) + 1 + 273 = \mathbf{N} + \mathbf{186} \\
&(N \geq 273)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 138) &= B_{\bar{N}}(2N + 138 - B_{\bar{N}}(2N + 137)) + B_{\bar{N}}(2N + 138 - B_{\bar{N}}(2N + 136)) + B_{\bar{N}}(2N + 138 - B_{\bar{N}}(2N + 135)) \\
&= B_{\bar{N}}(2N + 138 - (N + 186)) + B_{\bar{N}}(2N + 138 - (N + 225)) + B_{\bar{N}}(2N + 138 - (2N + 136)) \\
&= B_{\bar{N}}(N - 48) + B_{\bar{N}}(N - 87) + B_{\bar{N}}(2) = (N - 48) + (N - 87) + 2 = \mathbf{2N} - \mathbf{133} \\
&(N \geq 117)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 139) &= B_{\bar{N}}(2N + 139 - B_{\bar{N}}(2N + 138)) + B_{\bar{N}}(2N + 139 - B_{\bar{N}}(2N + 137)) + B_{\bar{N}}(2N + 139 - B_{\bar{N}}(2N + 136)) \\
&= B_{\bar{N}}(2N + 139 - (2N - 133)) + B_{\bar{N}}(2N + 139 - (N + 186)) + B_{\bar{N}}(2N + 139 - (N + 225)) \\
&= B_{\bar{N}}(272) + B_{\bar{N}}(N - 47) + B_{\bar{N}}(N - 86) = 272 + (N - 47) + (N - 86) = \mathbf{2N} + \mathbf{139} \\
&(N \geq 272)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 140) &= B_{\bar{N}}(2N + 140 - B_{\bar{N}}(2N + 139)) + B_{\bar{N}}(2N + 140 - B_{\bar{N}}(2N + 138)) + B_{\bar{N}}(2N + 140 - B_{\bar{N}}(2N + 137)) \\
&= B_{\bar{N}}(2N + 140 - (2N + 139)) + B_{\bar{N}}(2N + 140 - (2N - 133)) + B_{\bar{N}}(2N + 140 - (N + 186)) \\
&= B_{\bar{N}}(1) + B_{\bar{N}}(273) + B_{\bar{N}}(N - 46) = 1 + 273 + (N - 46) = \mathbf{N} + \mathbf{228} \\
&(N \geq 273)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 141) &= B_{\bar{N}}(2N + 141 - B_{\bar{N}}(2N + 140)) + B_{\bar{N}}(2N + 141 - B_{\bar{N}}(2N + 139)) + B_{\bar{N}}(2N + 141 - B_{\bar{N}}(2N + 138)) \\
&= B_{\bar{N}}(2N + 141 - (N + 228)) + B_{\bar{N}}(2N + 141 - (2N + 139)) + B_{\bar{N}}(2N + 141 - (2N - 133)) \\
&= B_{\bar{N}}(N - 87) + B_{\bar{N}}(2) + B_{\bar{N}}(274) = (N - 87) + 2 + 274 = \mathbf{N} + \mathbf{189} \\
&(N \geq 274)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 142) &= B_{\bar{N}}(2N + 142 - B_{\bar{N}}(2N + 141)) + B_{\bar{N}}(2N + 142 - B_{\bar{N}}(2N + 140)) + B_{\bar{N}}(2N + 142 - B_{\bar{N}}(2N + 139)) \\
&= B_{\bar{N}}(2N + 142 - (N + 189)) + B_{\bar{N}}(2N + 142 - (N + 228)) + B_{\bar{N}}(2N + 142 - (2N + 139)) \\
&= B_{\bar{N}}(N - 47) + B_{\bar{N}}(N - 86) + B_{\bar{N}}(3) = (N - 47) + (N - 86) + 3 = \mathbf{2N} - \mathbf{130} \\
&(N \geq 134)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 143) &= B_{\bar{N}}(2N + 143 - B_{\bar{N}}(2N + 142)) + B_{\bar{N}}(2N + 143 - B_{\bar{N}}(2N + 141)) + B_{\bar{N}}(2N + 143 - B_{\bar{N}}(2N + 140)) \\
&= B_{\bar{N}}(2N + 143 - (2N - 130)) + B_{\bar{N}}(2N + 143 - (N + 189)) + B_{\bar{N}}(2N + 143 - (N + 228)) \\
&= B_{\bar{N}}(273) + B_{\bar{N}}(N - 46) + B_{\bar{N}}(N - 85) = 273 + (N - 46) + (N - 85) = \mathbf{2N} + \mathbf{142} \\
&(N \geq 273)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 144) &= B_{\bar{N}}(2N + 144 - B_{\bar{N}}(2N + 143)) + B_{\bar{N}}(2N + 144 - B_{\bar{N}}(2N + 142)) + B_{\bar{N}}(2N + 144 - B_{\bar{N}}(2N + 141)) \\
&= B_{\bar{N}}(2N + 144 - (2N + 142)) + B_{\bar{N}}(2N + 144 - (2N - 130)) + B_{\bar{N}}(2N + 144 - (N + 189)) \\
&= B_{\bar{N}}(2) + B_{\bar{N}}(274) + B_{\bar{N}}(N - 45) = 2 + 274 + (N - 45) = \mathbf{N} + \mathbf{231} \\
&(N \geq 274)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 145) &= B_{\bar{N}}(2N + 145 - B_{\bar{N}}(2N + 144)) + B_{\bar{N}}(2N + 145 - B_{\bar{N}}(2N + 143)) + B_{\bar{N}}(2N + 145 - B_{\bar{N}}(2N + 142)) \\
&= B_{\bar{N}}(2N + 145 - (N + 231)) + B_{\bar{N}}(2N + 145 - (2N + 142)) + B_{\bar{N}}(2N + 145 - (2N - 130)) \\
&= B_{\bar{N}}(N - 86) + B_{\bar{N}}(3) + B_{\bar{N}}(275) = (N - 86) + 3 + 275 = \mathbf{N} + \mathbf{192} \\
&(N \geq 275)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 146) &= B_{\bar{N}}(2N + 146 - B_{\bar{N}}(2N + 145)) + B_{\bar{N}}(2N + 146 - B_{\bar{N}}(2N + 144)) + B_{\bar{N}}(2N + 146 - B_{\bar{N}}(2N + 143)) \\
&= B_{\bar{N}}(2N + 146 - (N + 192)) + B_{\bar{N}}(2N + 146 - (N + 231)) + B_{\bar{N}}(2N + 146 - (2N + 142)) \\
&= B_{\bar{N}}(N - 46) + B_{\bar{N}}(N - 85) + B_{\bar{N}}(4) = (N - 46) + (N - 85) + 4 = \mathbf{2N} - \mathbf{127} \\
&(N \geq 220)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 147) &= B_{\bar{N}}(2N + 147 - B_{\bar{N}}(2N + 146)) + B_{\bar{N}}(2N + 147 - B_{\bar{N}}(2N + 145)) + B_{\bar{N}}(2N + 147 - B_{\bar{N}}(2N + 144)) \\
&= B_{\bar{N}}(2N + 147 - (2N - 127)) + B_{\bar{N}}(2N + 147 - (N + 192)) + B_{\bar{N}}(2N + 147 - (N + 231)) \\
&= B_{\bar{N}}(274) + B_{\bar{N}}(N - 45) + B_{\bar{N}}(N - 84) = 274 + (N - 45) + (N - 84) = \mathbf{2N} + \mathbf{145} \\
&(N \geq 274)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 148) &= B_{\bar{N}}(2N + 148 - B_{\bar{N}}(2N + 147)) + B_{\bar{N}}(2N + 148 - B_{\bar{N}}(2N + 146)) + B_{\bar{N}}(2N + 148 - B_{\bar{N}}(2N + 145)) \\
&= B_{\bar{N}}(2N + 148 - (2N + 145)) + B_{\bar{N}}(2N + 148 - (2N - 127)) + B_{\bar{N}}(2N + 148 - (N + 192)) \\
&= B_{\bar{N}}(3) + B_{\bar{N}}(275) + B_{\bar{N}}(N - 44) = 3 + 275 + (N - 44) = \mathbf{N} + \mathbf{234} \\
&(N \geq 275)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 149) &= B_{\bar{N}}(2N + 149 - B_{\bar{N}}(2N + 148)) + B_{\bar{N}}(2N + 149 - B_{\bar{N}}(2N + 147)) + B_{\bar{N}}(2N + 149 - B_{\bar{N}}(2N + 146)) \\
&= B_{\bar{N}}(2N + 149 - (N + 234)) + B_{\bar{N}}(2N + 149 - (2N + 145)) + B_{\bar{N}}(2N + 149 - (2N - 127)) \\
&= B_{\bar{N}}(N - 85) + B_{\bar{N}}(4) + B_{\bar{N}}(276) = (N - 85) + 4 + 276 = \mathbf{N} + \mathbf{195} \\
&(N \geq 276)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 150) &= B_{\bar{N}}(2N + 150 - B_{\bar{N}}(2N + 149)) + B_{\bar{N}}(2N + 150 - B_{\bar{N}}(2N + 148)) + B_{\bar{N}}(2N + 150 - B_{\bar{N}}(2N + 147)) \\
&= B_{\bar{N}}(2N + 150 - (N + 195)) + B_{\bar{N}}(2N + 150 - (N + 234)) + B_{\bar{N}}(2N + 150 - (2N + 145)) \\
&= B_{\bar{N}}(N - 45) + B_{\bar{N}}(N - 84) + B_{\bar{N}}(5) = (N - 45) + (N - 84) + 5 = \mathbf{2N} - \mathbf{124} \\
&(N \geq 124)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 151) &= B_{\bar{N}}(2N + 151 - B_{\bar{N}}(2N + 150)) + B_{\bar{N}}(2N + 151 - B_{\bar{N}}(2N + 149)) + B_{\bar{N}}(2N + 151 - B_{\bar{N}}(2N + 148)) \\
&= B_{\bar{N}}(2N + 151 - (2N - 124)) + B_{\bar{N}}(2N + 151 - (N + 195)) + B_{\bar{N}}(2N + 151 - (N + 234)) \\
&= B_{\bar{N}}(275) + B_{\bar{N}}(N - 44) + B_{\bar{N}}(N - 83) = 275 + (N - 44) + (N - 83) = \mathbf{2N} + \mathbf{148} \\
&(N \geq 275)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 152) &= B_{\bar{N}}(2N + 152 - B_{\bar{N}}(2N + 151)) + B_{\bar{N}}(2N + 152 - B_{\bar{N}}(2N + 150)) + B_{\bar{N}}(2N + 152 - B_{\bar{N}}(2N + 149)) \\
&= B_{\bar{N}}(2N + 152 - (2N + 148)) + B_{\bar{N}}(2N + 152 - (2N - 124)) + B_{\bar{N}}(2N + 152 - (N + 195)) \\
&= B_{\bar{N}}(4) + B_{\bar{N}}(276) + B_{\bar{N}}(N - 43) = 4 + 276 + (N - 43) = \mathbf{N} + \mathbf{237} \\
&(N \geq 276)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 153) &= B_{\bar{N}}(2N + 153 - B_{\bar{N}}(2N + 152)) + B_{\bar{N}}(2N + 153 - B_{\bar{N}}(2N + 151)) + B_{\bar{N}}(2N + 153 - B_{\bar{N}}(2N + 150)) \\
&= B_{\bar{N}}(2N + 153 - (N + 237)) + B_{\bar{N}}(2N + 153 - (2N + 148)) + B_{\bar{N}}(2N + 153 - (2N - 124)) \\
&= B_{\bar{N}}(N - 84) + B_{\bar{N}}(5) + B_{\bar{N}}(277) = (N - 84) + 5 + 277 = \mathbf{N} + \mathbf{198} \\
&(N \geq 277)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 154) &= B_{\bar{N}}(2N + 154 - B_{\bar{N}}(2N + 153)) + B_{\bar{N}}(2N + 154 - B_{\bar{N}}(2N + 152)) + B_{\bar{N}}(2N + 154 - B_{\bar{N}}(2N + 151)) \\
&= B_{\bar{N}}(2N + 154 - (N + 198)) + B_{\bar{N}}(2N + 154 - (N + 237)) + B_{\bar{N}}(2N + 154 - (2N + 148)) \\
&= B_{\bar{N}}(N - 44) + B_{\bar{N}}(N - 83) + B_{\bar{N}}(6) = (N - 44) + (N - 83) + 6 = \mathbf{2N} - \mathbf{121} \\
&(N \geq 232)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 155) &= B_{\bar{N}}(2N + 155 - B_{\bar{N}}(2N + 154)) + B_{\bar{N}}(2N + 155 - B_{\bar{N}}(2N + 153)) + B_{\bar{N}}(2N + 155 - B_{\bar{N}}(2N + 152)) \\
&= B_{\bar{N}}(2N + 155 - (2N - 121)) + B_{\bar{N}}(2N + 155 - (N + 198)) + B_{\bar{N}}(2N + 155 - (N + 237)) \\
&= B_{\bar{N}}(276) + B_{\bar{N}}(N - 43) + B_{\bar{N}}(N - 82) = 276 + (N - 43) + (N - 82) = \mathbf{2N} + \mathbf{151} \\
&(N \geq 276)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 156) &= B_{\bar{N}}(2N + 156 - B_{\bar{N}}(2N + 155)) + B_{\bar{N}}(2N + 156 - B_{\bar{N}}(2N + 154)) + B_{\bar{N}}(2N + 156 - B_{\bar{N}}(2N + 153)) \\
&= B_{\bar{N}}(2N + 156 - (2N + 151)) + B_{\bar{N}}(2N + 156 - (2N - 121)) + B_{\bar{N}}(2N + 156 - (N + 198)) \\
&= B_{\bar{N}}(5) + B_{\bar{N}}(277) + B_{\bar{N}}(N - 42) = 5 + 277 + (N - 42) = \mathbf{N} + \mathbf{240} \\
&(N \geq 277)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 157) &= B_{\bar{N}}(2N + 157 - B_{\bar{N}}(2N + 156)) + B_{\bar{N}}(2N + 157 - B_{\bar{N}}(2N + 155)) + B_{\bar{N}}(2N + 157 - B_{\bar{N}}(2N + 154)) \\
&= B_{\bar{N}}(2N + 157 - (N + 240)) + B_{\bar{N}}(2N + 157 - (2N + 151)) + B_{\bar{N}}(2N + 157 - (2N - 121)) \\
&= B_{\bar{N}}(N - 83) + B_{\bar{N}}(6) + B_{\bar{N}}(278) = (N - 83) + 6 + 278 = \mathbf{N} + \mathbf{201} \\
&(N \geq 278)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 158) &= B_{\bar{N}}(2N + 158 - B_{\bar{N}}(2N + 157)) + B_{\bar{N}}(2N + 158 - B_{\bar{N}}(2N + 156)) + B_{\bar{N}}(2N + 158 - B_{\bar{N}}(2N + 155)) \\
&= B_{\bar{N}}(2N + 158 - (N + 201)) + B_{\bar{N}}(2N + 158 - (N + 240)) + B_{\bar{N}}(2N + 158 - (2N + 151)) \\
&= B_{\bar{N}}(N - 43) + B_{\bar{N}}(N - 82) + B_{\bar{N}}(7) = (N - 43) + (N - 82) + 7 = \mathbf{2N} - \mathbf{118} \\
&(N \geq 173)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 159) &= B_{\bar{N}}(2N + 159 - B_{\bar{N}}(2N + 158)) + B_{\bar{N}}(2N + 159 - B_{\bar{N}}(2N + 157)) + B_{\bar{N}}(2N + 159 - B_{\bar{N}}(2N + 156)) \\
&= B_{\bar{N}}(2N + 159 - (2N - 118)) + B_{\bar{N}}(2N + 159 - (N + 201)) + B_{\bar{N}}(2N + 159 - (N + 240)) \\
&= B_{\bar{N}}(277) + B_{\bar{N}}(N - 42) + B_{\bar{N}}(N - 81) = 277 + (N - 42) + (N - 81) = \mathbf{2N} + \mathbf{154} \\
&(N \geq 277)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 160) &= B_{\bar{N}}(2N + 160 - B_{\bar{N}}(2N + 159)) + B_{\bar{N}}(2N + 160 - B_{\bar{N}}(2N + 158)) + B_{\bar{N}}(2N + 160 - B_{\bar{N}}(2N + 157)) \\
&= B_{\bar{N}}(2N + 160 - (2N + 154)) + B_{\bar{N}}(2N + 160 - (2N - 118)) + B_{\bar{N}}(2N + 160 - (N + 201)) \\
&= B_{\bar{N}}(6) + B_{\bar{N}}(278) + B_{\bar{N}}(N - 41) = 6 + 278 + (N - 41) = \mathbf{N} + \mathbf{243} \\
&(N \geq 278)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 161) &= B_{\bar{N}}(2N + 161 - B_{\bar{N}}(2N + 160)) + B_{\bar{N}}(2N + 161 - B_{\bar{N}}(2N + 159)) + B_{\bar{N}}(2N + 161 - B_{\bar{N}}(2N + 158)) \\
&= B_{\bar{N}}(2N + 161 - (N + 243)) + B_{\bar{N}}(2N + 161 - (2N + 154)) + B_{\bar{N}}(2N + 161 - (2N - 118)) \\
&= B_{\bar{N}}(N - 82) + B_{\bar{N}}(7) + B_{\bar{N}}(279) = (N - 82) + 7 + 279 = \mathbf{N} + \mathbf{204} \\
&(N \geq 279)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 162) &= B_{\bar{N}}(2N + 162 - B_{\bar{N}}(2N + 161)) + B_{\bar{N}}(2N + 162 - B_{\bar{N}}(2N + 160)) + B_{\bar{N}}(2N + 162 - B_{\bar{N}}(2N + 159)) \\
&= B_{\bar{N}}(2N + 162 - (N + 204)) + B_{\bar{N}}(2N + 162 - (N + 243)) + B_{\bar{N}}(2N + 162 - (2N + 154)) \\
&= B_{\bar{N}}(N - 42) + B_{\bar{N}}(N - 81) + B_{\bar{N}}(8) = (N - 42) + (N - 81) + 8 = \mathbf{2N} - \mathbf{115} \\
&(N \geq 82)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 163) &= B_{\bar{N}}(2N + 163 - B_{\bar{N}}(2N + 162)) + B_{\bar{N}}(2N + 163 - B_{\bar{N}}(2N + 161)) + B_{\bar{N}}(2N + 163 - B_{\bar{N}}(2N + 160)) \\
&= B_{\bar{N}}(2N + 163 - (2N - 115)) + B_{\bar{N}}(2N + 163 - (N + 204)) + B_{\bar{N}}(2N + 163 - (N + 243)) \\
&= B_{\bar{N}}(278) + B_{\bar{N}}(N - 41) + B_{\bar{N}}(N - 80) = 278 + (N - 41) + (N - 80) = \mathbf{2N} + \mathbf{157} \\
&(N \geq 278)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 164) &= B_{\bar{N}}(2N + 164 - B_{\bar{N}}(2N + 163)) + B_{\bar{N}}(2N + 164 - B_{\bar{N}}(2N + 162)) + B_{\bar{N}}(2N + 164 - B_{\bar{N}}(2N + 161)) \\
&= B_{\bar{N}}(2N + 164 - (2N + 157)) + B_{\bar{N}}(2N + 164 - (2N - 115)) + B_{\bar{N}}(2N + 164 - (N + 204)) \\
&= B_{\bar{N}}(7) + B_{\bar{N}}(279) + B_{\bar{N}}(N - 40) = 7 + 279 + (N - 40) = \mathbf{N} + \mathbf{246} \\
&(N \geq 279)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 165) &= B_{\bar{N}}(2N + 165 - B_{\bar{N}}(2N + 164)) + B_{\bar{N}}(2N + 165 - B_{\bar{N}}(2N + 163)) + B_{\bar{N}}(2N + 165 - B_{\bar{N}}(2N + 162)) \\
&= B_{\bar{N}}(2N + 165 - (N + 246)) + B_{\bar{N}}(2N + 165 - (2N + 157)) + B_{\bar{N}}(2N + 165 - (2N - 115)) \\
&= B_{\bar{N}}(N - 81) + B_{\bar{N}}(8) + B_{\bar{N}}(280) = (N - 81) + 8 + 280 = \mathbf{N} + \mathbf{207} \\
&(N \geq 280)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 166) &= B_{\bar{N}}(2N + 166 - B_{\bar{N}}(2N + 165)) + B_{\bar{N}}(2N + 166 - B_{\bar{N}}(2N + 164)) + B_{\bar{N}}(2N + 166 - B_{\bar{N}}(2N + 163)) \\
&= B_{\bar{N}}(2N + 166 - (N + 207)) + B_{\bar{N}}(2N + 166 - (N + 246)) + B_{\bar{N}}(2N + 166 - (2N + 157)) \\
&= B_{\bar{N}}(N - 41) + B_{\bar{N}}(N - 80) + B_{\bar{N}}(9) = (N - 41) + (N - 80) + 9 = \mathbf{2N} - \mathbf{112} \\
&(N \geq 151)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 167) &= B_{\bar{N}}(2N + 167 - B_{\bar{N}}(2N + 166)) + B_{\bar{N}}(2N + 167 - B_{\bar{N}}(2N + 165)) + B_{\bar{N}}(2N + 167 - B_{\bar{N}}(2N + 164)) \\
&= B_{\bar{N}}(2N + 167 - (2N - 112)) + B_{\bar{N}}(2N + 167 - (N + 207)) + B_{\bar{N}}(2N + 167 - (N + 246)) \\
&= B_{\bar{N}}(279) + B_{\bar{N}}(N - 40) + B_{\bar{N}}(N - 79) = 279 + (N - 40) + (N - 79) = \mathbf{2N} + \mathbf{160} \\
&(N \geq 279)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 168) &= B_{\bar{N}}(2N + 168 - B_{\bar{N}}(2N + 167)) + B_{\bar{N}}(2N + 168 - B_{\bar{N}}(2N + 166)) + B_{\bar{N}}(2N + 168 - B_{\bar{N}}(2N + 165)) \\
&= B_{\bar{N}}(2N + 168 - (2N + 160)) + B_{\bar{N}}(2N + 168 - (2N - 112)) + B_{\bar{N}}(2N + 168 - (N + 207)) \\
&= B_{\bar{N}}(8) + B_{\bar{N}}(280) + B_{\bar{N}}(N - 39) = 8 + 280 + (N - 39) = \mathbf{N} + \mathbf{249} \\
&(N \geq 280)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 169) &= B_{\bar{N}}(2N + 169 - B_{\bar{N}}(2N + 168)) + B_{\bar{N}}(2N + 169 - B_{\bar{N}}(2N + 167)) + B_{\bar{N}}(2N + 169 - B_{\bar{N}}(2N + 166)) \\
&= B_{\bar{N}}(2N + 169 - (N + 249)) + B_{\bar{N}}(2N + 169 - (2N + 160)) + B_{\bar{N}}(2N + 169 - (2N - 112)) \\
&= B_{\bar{N}}(N - 80) + B_{\bar{N}}(9) + B_{\bar{N}}(281) = (N - 80) + 9 + 281 = \mathbf{N} + \mathbf{210} \\
&(N \geq 281)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 170) &= B_{\bar{N}}(2N + 170 - B_{\bar{N}}(2N + 169)) + B_{\bar{N}}(2N + 170 - B_{\bar{N}}(2N + 168)) + B_{\bar{N}}(2N + 170 - B_{\bar{N}}(2N + 167)) \\
&= B_{\bar{N}}(2N + 170 - (N + 210)) + B_{\bar{N}}(2N + 170 - (N + 249)) + B_{\bar{N}}(2N + 170 - (2N + 160)) \\
&= B_{\bar{N}}(N - 40) + B_{\bar{N}}(N - 79) + B_{\bar{N}}(10) = (N - 40) + (N - 79) + 10 = \mathbf{2N} - \mathbf{109} \\
&(N \geq 151)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 171) &= B_{\bar{N}}(2N + 171 - B_{\bar{N}}(2N + 170)) + B_{\bar{N}}(2N + 171 - B_{\bar{N}}(2N + 169)) + B_{\bar{N}}(2N + 171 - B_{\bar{N}}(2N + 168)) \\
&= B_{\bar{N}}(2N + 171 - (2N - 109)) + B_{\bar{N}}(2N + 171 - (N + 210)) + B_{\bar{N}}(2N + 171 - (N + 249)) \\
&= B_{\bar{N}}(280) + B_{\bar{N}}(N - 39) + B_{\bar{N}}(N - 78) = 280 + (N - 39) + (N - 78) = \mathbf{2N} + \mathbf{163} \\
&(N \geq 280)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 172) &= B_{\bar{N}}(2N + 172 - B_{\bar{N}}(2N + 171)) + B_{\bar{N}}(2N + 172 - B_{\bar{N}}(2N + 170)) + B_{\bar{N}}(2N + 172 - B_{\bar{N}}(2N + 169)) \\
&= B_{\bar{N}}(2N + 172 - (2N + 163)) + B_{\bar{N}}(2N + 172 - (2N - 109)) + B_{\bar{N}}(2N + 172 - (N + 210)) \\
&= B_{\bar{N}}(9) + B_{\bar{N}}(281) + B_{\bar{N}}(N - 38) = 9 + 281 + (N - 38) = \mathbf{N} + \mathbf{252} \\
&(N \geq 281)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 173) &= B_{\bar{N}}(2N + 173 - B_{\bar{N}}(2N + 172)) + B_{\bar{N}}(2N + 173 - B_{\bar{N}}(2N + 171)) + B_{\bar{N}}(2N + 173 - B_{\bar{N}}(2N + 170)) \\
&= B_{\bar{N}}(2N + 173 - (N + 252)) + B_{\bar{N}}(2N + 173 - (2N + 163)) + B_{\bar{N}}(2N + 173 - (2N - 109)) \\
&= B_{\bar{N}}(N - 79) + B_{\bar{N}}(10) + B_{\bar{N}}(282) = (N - 79) + 10 + 282 = \mathbf{N} + \mathbf{213} \\
&(N \geq 282)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 174) &= B_{\bar{N}}(2N + 174 - B_{\bar{N}}(2N + 173)) + B_{\bar{N}}(2N + 174 - B_{\bar{N}}(2N + 172)) + B_{\bar{N}}(2N + 174 - B_{\bar{N}}(2N + 171)) \\
&= B_{\bar{N}}(2N + 174 - (N + 213)) + B_{\bar{N}}(2N + 174 - (N + 252)) + B_{\bar{N}}(2N + 174 - (2N + 163)) \\
&= B_{\bar{N}}(N - 39) + B_{\bar{N}}(N - 78) + B_{\bar{N}}(11) = (N - 39) + (N - 78) + 11 = \mathbf{2N} - \mathbf{106} \\
&(N \geq 82)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 175) &= B_{\bar{N}}(2N + 175 - B_{\bar{N}}(2N + 174)) + B_{\bar{N}}(2N + 175 - B_{\bar{N}}(2N + 173)) + B_{\bar{N}}(2N + 175 - B_{\bar{N}}(2N + 172)) \\
&= B_{\bar{N}}(2N + 175 - (2N - 106)) + B_{\bar{N}}(2N + 175 - (N + 213)) + B_{\bar{N}}(2N + 175 - (N + 252)) \\
&= B_{\bar{N}}(281) + B_{\bar{N}}(N - 38) + B_{\bar{N}}(N - 77) = 281 + (N - 38) + (N - 77) = \mathbf{2N} + \mathbf{166} \\
&(N \geq 281)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 176) &= B_{\bar{N}}(2N + 176 - B_{\bar{N}}(2N + 175)) + B_{\bar{N}}(2N + 176 - B_{\bar{N}}(2N + 174)) + B_{\bar{N}}(2N + 176 - B_{\bar{N}}(2N + 173)) \\
&= B_{\bar{N}}(2N + 176 - (2N + 166)) + B_{\bar{N}}(2N + 176 - (2N - 106)) + B_{\bar{N}}(2N + 176 - (N + 213)) \\
&= B_{\bar{N}}(10) + B_{\bar{N}}(282) + B_{\bar{N}}(N - 37) = 10 + 282 + (N - 37) = \mathbf{N} + \mathbf{255} \\
&(N \geq 282)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 177) &= B_{\bar{N}}(2N + 177 - B_{\bar{N}}(2N + 176)) + B_{\bar{N}}(2N + 177 - B_{\bar{N}}(2N + 175)) + B_{\bar{N}}(2N + 177 - B_{\bar{N}}(2N + 174)) \\
&= B_{\bar{N}}(2N + 177 - (N + 255)) + B_{\bar{N}}(2N + 177 - (2N + 166)) + B_{\bar{N}}(2N + 177 - (2N - 106)) \\
&= B_{\bar{N}}(N - 78) + B_{\bar{N}}(11) + B_{\bar{N}}(283) = (N - 78) + 11 + 283 = \mathbf{N} + \mathbf{216} \\
&(N \geq 283)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 178) &= B_{\bar{N}}(2N + 178 - B_{\bar{N}}(2N + 177)) + B_{\bar{N}}(2N + 178 - B_{\bar{N}}(2N + 176)) + B_{\bar{N}}(2N + 178 - B_{\bar{N}}(2N + 175)) \\
&= B_{\bar{N}}(2N + 178 - (N + 216)) + B_{\bar{N}}(2N + 178 - (N + 255)) + B_{\bar{N}}(2N + 178 - (2N + 166)) \\
&= B_{\bar{N}}(N - 38) + B_{\bar{N}}(N - 77) + B_{\bar{N}}(12) = (N - 38) + (N - 77) + 12 = \mathbf{2N} - \mathbf{103} \\
&(N \geq 140)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 179) &= B_{\bar{N}}(2N + 179 - B_{\bar{N}}(2N + 178)) + B_{\bar{N}}(2N + 179 - B_{\bar{N}}(2N + 177)) + B_{\bar{N}}(2N + 179 - B_{\bar{N}}(2N + 176)) \\
&= B_{\bar{N}}(2N + 179 - (2N - 103)) + B_{\bar{N}}(2N + 179 - (N + 216)) + B_{\bar{N}}(2N + 179 - (N + 255)) \\
&= B_{\bar{N}}(282) + B_{\bar{N}}(N - 37) + B_{\bar{N}}(N - 76) = 282 + (N - 37) + (N - 76) = \mathbf{2N} + \mathbf{169} \\
&(N \geq 282)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 180) &= B_{\bar{N}}(2N + 180 - B_{\bar{N}}(2N + 179)) + B_{\bar{N}}(2N + 180 - B_{\bar{N}}(2N + 178)) + B_{\bar{N}}(2N + 180 - B_{\bar{N}}(2N + 177)) \\
&= B_{\bar{N}}(2N + 180 - (2N + 169)) + B_{\bar{N}}(2N + 180 - (2N - 103)) + B_{\bar{N}}(2N + 180 - (N + 216)) \\
&= B_{\bar{N}}(11) + B_{\bar{N}}(283) + B_{\bar{N}}(N - 36) = 11 + 283 + (N - 36) = \mathbf{N} + \mathbf{258} \\
&(N \geq 283)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 181) &= B_{\bar{N}}(2N + 181 - B_{\bar{N}}(2N + 180)) + B_{\bar{N}}(2N + 181 - B_{\bar{N}}(2N + 179)) + B_{\bar{N}}(2N + 181 - B_{\bar{N}}(2N + 178)) \\
&= B_{\bar{N}}(2N + 181 - (N + 258)) + B_{\bar{N}}(2N + 181 - (2N + 169)) + B_{\bar{N}}(2N + 181 - (2N - 103)) \\
&= B_{\bar{N}}(N - 77) + B_{\bar{N}}(12) + B_{\bar{N}}(284) = (N - 77) + 12 + 284 = \mathbf{N} + \mathbf{219} \\
&(N \geq 284)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 182) &= B_{\bar{N}}(2N + 182 - B_{\bar{N}}(2N + 181)) + B_{\bar{N}}(2N + 182 - B_{\bar{N}}(2N + 180)) + B_{\bar{N}}(2N + 182 - B_{\bar{N}}(2N + 179)) \\
&= B_{\bar{N}}(2N + 182 - (N + 219)) + B_{\bar{N}}(2N + 182 - (N + 258)) + B_{\bar{N}}(2N + 182 - (2N + 169)) \\
&= B_{\bar{N}}(N - 37) + B_{\bar{N}}(N - 76) + B_{\bar{N}}(13) = (N - 37) + (N - 76) + 13 = \mathbf{2N} - \mathbf{100} \\
&(N \geq 131)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 183) &= B_{\bar{N}}(2N + 183 - B_{\bar{N}}(2N + 182)) + B_{\bar{N}}(2N + 183 - B_{\bar{N}}(2N + 181)) + B_{\bar{N}}(2N + 183 - B_{\bar{N}}(2N + 180)) \\
&= B_{\bar{N}}(2N + 183 - (2N - 100)) + B_{\bar{N}}(2N + 183 - (N + 219)) + B_{\bar{N}}(2N + 183 - (N + 258)) \\
&= B_{\bar{N}}(283) + B_{\bar{N}}(N - 36) + B_{\bar{N}}(N - 75) = 283 + (N - 36) + (N - 75) = \mathbf{2N} + \mathbf{172} \\
&(N \geq 283)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 184) &= B_{\bar{N}}(2N + 184 - B_{\bar{N}}(2N + 183)) + B_{\bar{N}}(2N + 184 - B_{\bar{N}}(2N + 182)) + B_{\bar{N}}(2N + 184 - B_{\bar{N}}(2N + 181)) \\
&= B_{\bar{N}}(2N + 184 - (2N + 172)) + B_{\bar{N}}(2N + 184 - (2N - 100)) + B_{\bar{N}}(2N + 184 - (N + 219)) \\
&= B_{\bar{N}}(12) + B_{\bar{N}}(284) + B_{\bar{N}}(N - 35) = 12 + 284 + (N - 35) = \mathbf{N} + \mathbf{261} \\
&(N \geq 284)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 185) &= B_{\bar{N}}(2N + 185 - B_{\bar{N}}(2N + 184)) + B_{\bar{N}}(2N + 185 - B_{\bar{N}}(2N + 183)) + B_{\bar{N}}(2N + 185 - B_{\bar{N}}(2N + 182)) \\
&= B_{\bar{N}}(2N + 185 - (N + 261)) + B_{\bar{N}}(2N + 185 - (2N + 172)) + B_{\bar{N}}(2N + 185 - (2N - 100)) \\
&= B_{\bar{N}}(N - 76) + B_{\bar{N}}(13) + B_{\bar{N}}(285) = (N - 76) + 13 + 285 = \mathbf{N} + \mathbf{222} \\
&(N \geq 285)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 186) &= B_{\bar{N}}(2N + 186 - B_{\bar{N}}(2N + 185)) + B_{\bar{N}}(2N + 186 - B_{\bar{N}}(2N + 184)) + B_{\bar{N}}(2N + 186 - B_{\bar{N}}(2N + 183)) \\
&= B_{\bar{N}}(2N + 186 - (N + 222)) + B_{\bar{N}}(2N + 186 - (N + 261)) + B_{\bar{N}}(2N + 186 - (2N + 172)) \\
&= B_{\bar{N}}(N - 36) + B_{\bar{N}}(N - 75) + B_{\bar{N}}(14) = (N - 36) + (N - 75) + 14 = \mathbf{2N} - \mathbf{97} \\
&(N \geq 76)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 187) &= B_{\bar{N}}(2N + 187 - B_{\bar{N}}(2N + 186)) + B_{\bar{N}}(2N + 187 - B_{\bar{N}}(2N + 185)) + B_{\bar{N}}(2N + 187 - B_{\bar{N}}(2N + 184)) \\
&= B_{\bar{N}}(2N + 187 - (2N - 97)) + B_{\bar{N}}(2N + 187 - (N + 222)) + B_{\bar{N}}(2N + 187 - (N + 261)) \\
&= B_{\bar{N}}(284) + B_{\bar{N}}(N - 35) + B_{\bar{N}}(N - 74) = 284 + (N - 35) + (N - 74) = \mathbf{2N} + \mathbf{175} \\
&(N \geq 284)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 188) &= B_{\bar{N}}(2N + 188 - B_{\bar{N}}(2N + 187)) + B_{\bar{N}}(2N + 188 - B_{\bar{N}}(2N + 186)) + B_{\bar{N}}(2N + 188 - B_{\bar{N}}(2N + 185)) \\
&= B_{\bar{N}}(2N + 188 - (2N + 175)) + B_{\bar{N}}(2N + 188 - (2N - 97)) + B_{\bar{N}}(2N + 188 - (N + 222)) \\
&= B_{\bar{N}}(13) + B_{\bar{N}}(285) + B_{\bar{N}}(N - 34) = 13 + 285 + (N - 34) = \mathbf{N} + \mathbf{264} \\
&(N \geq 285)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 189) &= B_{\bar{N}}(2N + 189 - B_{\bar{N}}(2N + 188)) + B_{\bar{N}}(2N + 189 - B_{\bar{N}}(2N + 187)) + B_{\bar{N}}(2N + 189 - B_{\bar{N}}(2N + 186)) \\
&= B_{\bar{N}}(2N + 189 - (N + 264)) + B_{\bar{N}}(2N + 189 - (2N + 175)) + B_{\bar{N}}(2N + 189 - (2N - 97)) \\
&= B_{\bar{N}}(N - 75) + B_{\bar{N}}(14) + B_{\bar{N}}(286) = (N - 75) + 14 + 286 = \mathbf{N} + \mathbf{225} \\
&(N \geq 286)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 190) &= B_{\bar{N}}(2N + 190 - B_{\bar{N}}(2N + 189)) + B_{\bar{N}}(2N + 190 - B_{\bar{N}}(2N + 188)) + B_{\bar{N}}(2N + 190 - B_{\bar{N}}(2N + 187)) \\
&= B_{\bar{N}}(2N + 190 - (N + 225)) + B_{\bar{N}}(2N + 190 - (N + 264)) + B_{\bar{N}}(2N + 190 - (2N + 175)) \\
&= B_{\bar{N}}(N - 35) + B_{\bar{N}}(N - 74) + B_{\bar{N}}(15) = (N - 35) + (N - 74) + 15 = \mathbf{2N} - \mathbf{94} \\
&(N \geq 82)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 191) &= B_{\bar{N}}(2N + 191 - B_{\bar{N}}(2N + 190)) + B_{\bar{N}}(2N + 191 - B_{\bar{N}}(2N + 189)) + B_{\bar{N}}(2N + 191 - B_{\bar{N}}(2N + 188)) \\
&= B_{\bar{N}}(2N + 191 - (2N - 94)) + B_{\bar{N}}(2N + 191 - (N + 225)) + B_{\bar{N}}(2N + 191 - (N + 264)) \\
&= B_{\bar{N}}(285) + B_{\bar{N}}(N - 34) + B_{\bar{N}}(N - 73) = 285 + (N - 34) + (N - 73) = \mathbf{2N} + \mathbf{178} \\
&(N \geq 285)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 192) &= B_{\bar{N}}(2N + 192 - B_{\bar{N}}(2N + 191)) + B_{\bar{N}}(2N + 192 - B_{\bar{N}}(2N + 190)) + B_{\bar{N}}(2N + 192 - B_{\bar{N}}(2N + 189)) \\
&= B_{\bar{N}}(2N + 192 - (2N + 178)) + B_{\bar{N}}(2N + 192 - (2N - 94)) + B_{\bar{N}}(2N + 192 - (N + 225)) \\
&= B_{\bar{N}}(14) + B_{\bar{N}}(286) + B_{\bar{N}}(N - 33) = 14 + 286 + (N - 33) = \mathbf{N} + \mathbf{267} \\
&(N \geq 286)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 193) &= B_{\bar{N}}(2N + 193 - B_{\bar{N}}(2N + 192)) + B_{\bar{N}}(2N + 193 - B_{\bar{N}}(2N + 191)) + B_{\bar{N}}(2N + 193 - B_{\bar{N}}(2N + 190)) \\
&= B_{\bar{N}}(2N + 193 - (N + 267)) + B_{\bar{N}}(2N + 193 - (2N + 178)) + B_{\bar{N}}(2N + 193 - (2N - 94)) \\
&= B_{\bar{N}}(N - 74) + B_{\bar{N}}(15) + B_{\bar{N}}(287) = (N - 74) + 15 + 287 = \mathbf{N} + \mathbf{228} \\
&(N \geq 287)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 194) &= B_{\bar{N}}(2N + 194 - B_{\bar{N}}(2N + 193)) + B_{\bar{N}}(2N + 194 - B_{\bar{N}}(2N + 192)) + B_{\bar{N}}(2N + 194 - B_{\bar{N}}(2N + 191)) \\
&= B_{\bar{N}}(2N + 194 - (N + 228)) + B_{\bar{N}}(2N + 194 - (N + 267)) + B_{\bar{N}}(2N + 194 - (2N + 178)) \\
&= B_{\bar{N}}(N - 34) + B_{\bar{N}}(N - 73) + B_{\bar{N}}(16) = (N - 34) + (N - 73) + 16 = \mathbf{2N} - \mathbf{91} \\
&(N \geq 117)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 195) &= B_{\bar{N}}(2N + 195 - B_{\bar{N}}(2N + 194)) + B_{\bar{N}}(2N + 195 - B_{\bar{N}}(2N + 193)) + B_{\bar{N}}(2N + 195 - B_{\bar{N}}(2N + 192)) \\
&= B_{\bar{N}}(2N + 195 - (2N - 91)) + B_{\bar{N}}(2N + 195 - (N + 228)) + B_{\bar{N}}(2N + 195 - (N + 267)) \\
&= B_{\bar{N}}(286) + B_{\bar{N}}(N - 33) + B_{\bar{N}}(N - 72) = 286 + (N - 33) + (N - 72) = \mathbf{2N} + \mathbf{181} \\
&(N \geq 286)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 196) &= B_{\bar{N}}(2N + 196 - B_{\bar{N}}(2N + 195)) + B_{\bar{N}}(2N + 196 - B_{\bar{N}}(2N + 194)) + B_{\bar{N}}(2N + 196 - B_{\bar{N}}(2N + 193)) \\
&= B_{\bar{N}}(2N + 196 - (2N + 181)) + B_{\bar{N}}(2N + 196 - (2N - 91)) + B_{\bar{N}}(2N + 196 - (N + 228)) \\
&= B_{\bar{N}}(15) + B_{\bar{N}}(287) + B_{\bar{N}}(N - 32) = 15 + 287 + (N - 32) = \mathbf{N} + \mathbf{270} \\
&(N \geq 287)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 197) &= B_{\bar{N}}(2N + 197 - B_{\bar{N}}(2N + 196)) + B_{\bar{N}}(2N + 197 - B_{\bar{N}}(2N + 195)) + B_{\bar{N}}(2N + 197 - B_{\bar{N}}(2N + 194)) \\
&= B_{\bar{N}}(2N + 197 - (N + 270)) + B_{\bar{N}}(2N + 197 - (2N + 181)) + B_{\bar{N}}(2N + 197 - (2N - 91)) \\
&= B_{\bar{N}}(N - 73) + B_{\bar{N}}(16) + B_{\bar{N}}(288) = (N - 73) + 16 + 288 = \mathbf{N} + \mathbf{231} \\
&(N \geq 288)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 198) &= B_{\bar{N}}(2N + 198 - B_{\bar{N}}(2N + 197)) + B_{\bar{N}}(2N + 198 - B_{\bar{N}}(2N + 196)) + B_{\bar{N}}(2N + 198 - B_{\bar{N}}(2N + 195)) \\
&= B_{\bar{N}}(2N + 198 - (N + 231)) + B_{\bar{N}}(2N + 198 - (N + 270)) + B_{\bar{N}}(2N + 198 - (2N + 181)) \\
&= B_{\bar{N}}(N - 33) + B_{\bar{N}}(N - 72) + B_{\bar{N}}(17) = (N - 33) + (N - 72) + 17 = \mathbf{2N} - \mathbf{88} \\
&(N \geq 78)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 199) &= B_{\bar{N}}(2N + 199 - B_{\bar{N}}(2N + 198)) + B_{\bar{N}}(2N + 199 - B_{\bar{N}}(2N + 197)) + B_{\bar{N}}(2N + 199 - B_{\bar{N}}(2N + 196)) \\
&= B_{\bar{N}}(2N + 199 - (2N - 88)) + B_{\bar{N}}(2N + 199 - (N + 231)) + B_{\bar{N}}(2N + 199 - (N + 270)) \\
&= B_{\bar{N}}(287) + B_{\bar{N}}(N - 32) + B_{\bar{N}}(N - 71) = 287 + (N - 32) + (N - 71) = \mathbf{2N} + \mathbf{184} \\
&(N \geq 287)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(\mathbf{2N} + \mathbf{200}) &= B_{\bar{N}}(2N + 200 - B_{\bar{N}}(2N + 199)) + B_{\bar{N}}(2N + 200 - B_{\bar{N}}(2N + 198)) + B_{\bar{N}}(2N + 200 - B_{\bar{N}}(2N + 197)) \\
&= B_{\bar{N}}(2N + 200 - (2N + 184)) + B_{\bar{N}}(2N + 200 - (2N - 88)) + B_{\bar{N}}(2N + 200 - (N + 231)) \\
&= B_{\bar{N}}(16) + B_{\bar{N}}(288) + B_{\bar{N}}(N - 31) = 16 + 288 + (N - 31) = \mathbf{N} + \mathbf{273} \\
&(N \geq 288)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(\mathbf{2N} + \mathbf{201}) &= B_{\bar{N}}(2N + 201 - B_{\bar{N}}(2N + 200)) + B_{\bar{N}}(2N + 201 - B_{\bar{N}}(2N + 199)) + B_{\bar{N}}(2N + 201 - B_{\bar{N}}(2N + 198)) \\
&= B_{\bar{N}}(2N + 201 - (N + 273)) + B_{\bar{N}}(2N + 201 - (2N + 184)) + B_{\bar{N}}(2N + 201 - (2N - 88)) \\
&= B_{\bar{N}}(N - 72) + B_{\bar{N}}(17) + B_{\bar{N}}(289) = (N - 72) + 17 + 289 = \mathbf{N} + \mathbf{234} \\
&(N \geq 289)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(\mathbf{2N} + \mathbf{202}) &= B_{\bar{N}}(2N + 202 - B_{\bar{N}}(2N + 201)) + B_{\bar{N}}(2N + 202 - B_{\bar{N}}(2N + 200)) + B_{\bar{N}}(2N + 202 - B_{\bar{N}}(2N + 199)) \\
&= B_{\bar{N}}(2N + 202 - (N + 234)) + B_{\bar{N}}(2N + 202 - (N + 273)) + B_{\bar{N}}(2N + 202 - (2N + 184)) \\
&= B_{\bar{N}}(N - 32) + B_{\bar{N}}(N - 71) + B_{\bar{N}}(18) = (N - 32) + (N - 71) + 18 = \mathbf{2N} - \mathbf{85} \\
&(N \geq 189)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(\mathbf{2N} + \mathbf{203}) &= B_{\bar{N}}(2N + 203 - B_{\bar{N}}(2N + 202)) + B_{\bar{N}}(2N + 203 - B_{\bar{N}}(2N + 201)) + B_{\bar{N}}(2N + 203 - B_{\bar{N}}(2N + 200)) \\
&= B_{\bar{N}}(2N + 203 - (2N - 85)) + B_{\bar{N}}(2N + 203 - (N + 234)) + B_{\bar{N}}(2N + 203 - (N + 273)) \\
&= B_{\bar{N}}(288) + B_{\bar{N}}(N - 31) + B_{\bar{N}}(N - 70) = 288 + (N - 31) + (N - 70) = \mathbf{2N} + \mathbf{187} \\
&(N \geq 288)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(\mathbf{2N} + \mathbf{204}) &= B_{\bar{N}}(2N + 204 - B_{\bar{N}}(2N + 203)) + B_{\bar{N}}(2N + 204 - B_{\bar{N}}(2N + 202)) + B_{\bar{N}}(2N + 204 - B_{\bar{N}}(2N + 201)) \\
&= B_{\bar{N}}(2N + 204 - (2N + 187)) + B_{\bar{N}}(2N + 204 - (2N - 85)) + B_{\bar{N}}(2N + 204 - (N + 234)) \\
&= B_{\bar{N}}(17) + B_{\bar{N}}(289) + B_{\bar{N}}(N - 30) = 17 + 289 + (N - 30) = \mathbf{N} + \mathbf{276} \\
&(N \geq 289)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + \mathbf{205}) &= B_{\bar{N}}(2N + 205 - B_{\bar{N}}(2N + 204)) + B_{\bar{N}}(2N + 205 - B_{\bar{N}}(2N + 203)) + B_{\bar{N}}(2N + 205 - B_{\bar{N}}(2N + 202)) \\
&= B_{\bar{N}}(2N + 205 - (N + 276)) + B_{\bar{N}}(2N + 205 - (2N + 187)) + B_{\bar{N}}(2N + 205 - (2N - 85)) \\
&= B_{\bar{N}}(N - 71) + B_{\bar{N}}(18) + B_{\bar{N}}(290) = (N - 71) + 18 + 290 = \mathbf{N} + \mathbf{237} \\
&(N \geq 290)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + \mathbf{206}) &= B_{\bar{N}}(2N + 206 - B_{\bar{N}}(2N + 205)) + B_{\bar{N}}(2N + 206 - B_{\bar{N}}(2N + 204)) + B_{\bar{N}}(2N + 206 - B_{\bar{N}}(2N + 203)) \\
&= B_{\bar{N}}(2N + 206 - (N + 237)) + B_{\bar{N}}(2N + 206 - (N + 276)) + B_{\bar{N}}(2N + 206 - (2N + 187)) \\
&= B_{\bar{N}}(N - 31) + B_{\bar{N}}(N - 70) + B_{\bar{N}}(19) = (N - 31) + (N - 70) + 19 = \mathbf{2N} - \mathbf{82} \\
&(N \geq 189)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + \mathbf{207}) &= B_{\bar{N}}(2N + 207 - B_{\bar{N}}(2N + 206)) + B_{\bar{N}}(2N + 207 - B_{\bar{N}}(2N + 205)) + B_{\bar{N}}(2N + 207 - B_{\bar{N}}(2N + 204)) \\
&= B_{\bar{N}}(2N + 207 - (2N - 82)) + B_{\bar{N}}(2N + 207 - (N + 237)) + B_{\bar{N}}(2N + 207 - (N + 276)) \\
&= B_{\bar{N}}(289) + B_{\bar{N}}(N - 30) + B_{\bar{N}}(N - 69) = 289 + (N - 30) + (N - 69) = \mathbf{2N} + \mathbf{190} \\
&(N \geq 289)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + \mathbf{208}) &= B_{\bar{N}}(2N + 208 - B_{\bar{N}}(2N + 207)) + B_{\bar{N}}(2N + 208 - B_{\bar{N}}(2N + 206)) + B_{\bar{N}}(2N + 208 - B_{\bar{N}}(2N + 205)) \\
&= B_{\bar{N}}(2N + 208 - (2N + 190)) + B_{\bar{N}}(2N + 208 - (2N - 82)) + B_{\bar{N}}(2N + 208 - (N + 237)) \\
&= B_{\bar{N}}(18) + B_{\bar{N}}(290) + B_{\bar{N}}(N - 29) = 18 + 290 + (N - 29) = \mathbf{N} + \mathbf{279} \\
&(N \geq 290)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + \mathbf{209}) &= B_{\bar{N}}(2N + 209 - B_{\bar{N}}(2N + 208)) + B_{\bar{N}}(2N + 209 - B_{\bar{N}}(2N + 207)) + B_{\bar{N}}(2N + 209 - B_{\bar{N}}(2N + 206)) \\
&= B_{\bar{N}}(2N + 209 - (N + 279)) + B_{\bar{N}}(2N + 209 - (2N + 190)) + B_{\bar{N}}(2N + 209 - (2N - 82)) \\
&= B_{\bar{N}}(N - 70) + B_{\bar{N}}(19) + B_{\bar{N}}(291) = (N - 70) + 19 + 291 = \mathbf{N} + \mathbf{240} \\
&(N \geq 291)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(\mathbf{2N} + \mathbf{210}) &= B_{\bar{N}}(2N + 210 - B_{\bar{N}}(2N + 209)) + B_{\bar{N}}(2N + 210 - B_{\bar{N}}(2N + 208)) + B_{\bar{N}}(2N + 210 - B_{\bar{N}}(2N + 207)) \\
&= B_{\bar{N}}(2N + 210 - (N + 240)) + B_{\bar{N}}(2N + 210 - (N + 279)) + B_{\bar{N}}(2N + 210 - (2N + 190)) \\
&= B_{\bar{N}}(N - 30) + B_{\bar{N}}(N - 69) + B_{\bar{N}}(20) = (N - 30) + (N - 69) + 20 = \mathbf{2N} - \mathbf{79} \\
&(N \geq 181)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(\mathbf{2N} + \mathbf{211}) &= B_{\bar{N}}(2N + 211 - B_{\bar{N}}(2N + 210)) + B_{\bar{N}}(2N + 211 - B_{\bar{N}}(2N + 209)) + B_{\bar{N}}(2N + 211 - B_{\bar{N}}(2N + 208)) \\
&= B_{\bar{N}}(2N + 211 - (2N - 79)) + B_{\bar{N}}(2N + 211 - (N + 240)) + B_{\bar{N}}(2N + 211 - (N + 279)) \\
&= B_{\bar{N}}(290) + B_{\bar{N}}(N - 29) + B_{\bar{N}}(N - 68) = 290 + (N - 29) + (N - 68) = \mathbf{2N} + \mathbf{193} \\
&(N \geq 290)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(\mathbf{2N} + \mathbf{212}) &= B_{\bar{N}}(2N + 212 - B_{\bar{N}}(2N + 211)) + B_{\bar{N}}(2N + 212 - B_{\bar{N}}(2N + 210)) + B_{\bar{N}}(2N + 212 - B_{\bar{N}}(2N + 209)) \\
&= B_{\bar{N}}(2N + 212 - (2N + 193)) + B_{\bar{N}}(2N + 212 - (2N - 79)) + B_{\bar{N}}(2N + 212 - (N + 240)) \\
&= B_{\bar{N}}(19) + B_{\bar{N}}(291) + B_{\bar{N}}(N - 28) = 19 + 291 + (N - 28) = \mathbf{N} + \mathbf{282} \\
&(N \geq 291)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(\mathbf{2N} + \mathbf{213}) &= B_{\bar{N}}(2N + 213 - B_{\bar{N}}(2N + 212)) + B_{\bar{N}}(2N + 213 - B_{\bar{N}}(2N + 211)) + B_{\bar{N}}(2N + 213 - B_{\bar{N}}(2N + 210)) \\
&= B_{\bar{N}}(2N + 213 - (N + 282)) + B_{\bar{N}}(2N + 213 - (2N + 193)) + B_{\bar{N}}(2N + 213 - (2N - 79)) \\
&= B_{\bar{N}}(N - 69) + B_{\bar{N}}(20) + B_{\bar{N}}(292) = (N - 69) + 20 + 292 = \mathbf{N} + \mathbf{243} \\
&(N \geq 292)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(\mathbf{2N} + \mathbf{214}) &= B_{\bar{N}}(2N + 214 - B_{\bar{N}}(2N + 213)) + B_{\bar{N}}(2N + 214 - B_{\bar{N}}(2N + 212)) + B_{\bar{N}}(2N + 214 - B_{\bar{N}}(2N + 211)) \\
&= B_{\bar{N}}(2N + 214 - (N + 243)) + B_{\bar{N}}(2N + 214 - (N + 282)) + B_{\bar{N}}(2N + 214 - (2N + 193)) \\
&= B_{\bar{N}}(N - 29) + B_{\bar{N}}(N - 68) + B_{\bar{N}}(21) = (N - 29) + (N - 68) + 21 = \mathbf{2N} - \mathbf{76} \\
&(N \geq 69)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(\mathbf{2N} + \mathbf{215}) &= B_{\bar{N}}(2N + 215 - B_{\bar{N}}(2N + 214)) + B_{\bar{N}}(2N + 215 - B_{\bar{N}}(2N + 213)) + B_{\bar{N}}(2N + 215 - B_{\bar{N}}(2N + 212)) \\
&= B_{\bar{N}}(2N + 215 - (2N - 76)) + B_{\bar{N}}(2N + 215 - (N + 243)) + B_{\bar{N}}(2N + 215 - (N + 282)) \\
&= B_{\bar{N}}(291) + B_{\bar{N}}(N - 28) + B_{\bar{N}}(N - 67) = 291 + (N - 28) + (N - 67) = \mathbf{2N} + \mathbf{196} \\
&(N \geq 291)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(\mathbf{2N} + \mathbf{216}) &= B_{\bar{N}}(2N + 216 - B_{\bar{N}}(2N + 215)) + B_{\bar{N}}(2N + 216 - B_{\bar{N}}(2N + 214)) + B_{\bar{N}}(2N + 216 - B_{\bar{N}}(2N + 213)) \\
&= B_{\bar{N}}(2N + 216 - (2N + 196)) + B_{\bar{N}}(2N + 216 - (2N - 76)) + B_{\bar{N}}(2N + 216 - (N + 243)) \\
&= B_{\bar{N}}(20) + B_{\bar{N}}(292) + B_{\bar{N}}(N - 27) = 20 + 292 + (N - 27) = \mathbf{N} + \mathbf{285} \\
&(N \geq 292)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(\mathbf{2N} + \mathbf{217}) &= B_{\bar{N}}(2N + 217 - B_{\bar{N}}(2N + 216)) + B_{\bar{N}}(2N + 217 - B_{\bar{N}}(2N + 215)) + B_{\bar{N}}(2N + 217 - B_{\bar{N}}(2N + 214)) \\
&= B_{\bar{N}}(2N + 217 - (N + 285)) + B_{\bar{N}}(2N + 217 - (2N + 196)) + B_{\bar{N}}(2N + 217 - (2N - 76)) \\
&= B_{\bar{N}}(N - 68) + B_{\bar{N}}(21) + B_{\bar{N}}(293) = (N - 68) + 21 + 293 = \mathbf{N} + \mathbf{246} \\
&(N \geq 293)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(\mathbf{2N} + \mathbf{218}) &= B_{\bar{N}}(2N + 218 - B_{\bar{N}}(2N + 217)) + B_{\bar{N}}(2N + 218 - B_{\bar{N}}(2N + 216)) + B_{\bar{N}}(2N + 218 - B_{\bar{N}}(2N + 215)) \\
&= B_{\bar{N}}(2N + 218 - (N + 246)) + B_{\bar{N}}(2N + 218 - (N + 285)) + B_{\bar{N}}(2N + 218 - (2N + 196)) \\
&= B_{\bar{N}}(N - 28) + B_{\bar{N}}(N - 67) + B_{\bar{N}}(22) = (N - 28) + (N - 67) + 22 = \mathbf{2N} - \mathbf{73} \\
&(N \geq 68)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(\mathbf{2N} + \mathbf{219}) &= B_{\bar{N}}(2N + 219 - B_{\bar{N}}(2N + 218)) + B_{\bar{N}}(2N + 219 - B_{\bar{N}}(2N + 217)) + B_{\bar{N}}(2N + 219 - B_{\bar{N}}(2N + 216)) \\
&= B_{\bar{N}}(2N + 219 - (2N - 73)) + B_{\bar{N}}(2N + 219 - (N + 246)) + B_{\bar{N}}(2N + 219 - (N + 285)) \\
&= B_{\bar{N}}(292) + B_{\bar{N}}(N - 27) + B_{\bar{N}}(N - 66) = 292 + (N - 27) + (N - 66) = \mathbf{2N} + \mathbf{199} \\
&(N \geq 292)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(\mathbf{2N} + \mathbf{220}) &= B_{\bar{N}}(2N + 220 - B_{\bar{N}}(2N + 219)) + B_{\bar{N}}(2N + 220 - B_{\bar{N}}(2N + 218)) + B_{\bar{N}}(2N + 220 - B_{\bar{N}}(2N + 217)) \\
&= B_{\bar{N}}(2N + 220 - (2N + 199)) + B_{\bar{N}}(2N + 220 - (2N - 73)) + B_{\bar{N}}(2N + 220 - (N + 246)) \\
&= B_{\bar{N}}(21) + B_{\bar{N}}(293) + B_{\bar{N}}(N - 26) = 21 + 293 + (N - 26) = \mathbf{N} + \mathbf{288} \\
&(N \geq 293)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(\mathbf{2N} + \mathbf{221}) &= B_{\bar{N}}(2N + 221 - B_{\bar{N}}(2N + 220)) + B_{\bar{N}}(2N + 221 - B_{\bar{N}}(2N + 219)) + B_{\bar{N}}(2N + 221 - B_{\bar{N}}(2N + 218)) \\
&= B_{\bar{N}}(2N + 221 - (N + 288)) + B_{\bar{N}}(2N + 221 - (2N + 199)) + B_{\bar{N}}(2N + 221 - (2N - 73)) \\
&= B_{\bar{N}}(N - 67) + B_{\bar{N}}(22) + B_{\bar{N}}(294) = (N - 67) + 22 + 294 = \mathbf{N} + \mathbf{249} \\
&(N \geq 294)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(\mathbf{2N} + \mathbf{222}) &= B_{\bar{N}}(2N + 222 - B_{\bar{N}}(2N + 221)) + B_{\bar{N}}(2N + 222 - B_{\bar{N}}(2N + 220)) + B_{\bar{N}}(2N + 222 - B_{\bar{N}}(2N + 219)) \\
&= B_{\bar{N}}(2N + 222 - (N + 249)) + B_{\bar{N}}(2N + 222 - (N + 288)) + B_{\bar{N}}(2N + 222 - (2N + 199)) \\
&= B_{\bar{N}}(N - 27) + B_{\bar{N}}(N - 66) + B_{\bar{N}}(23) = (N - 27) + (N - 66) + 23 = \mathbf{2N} - \mathbf{70} \\
&(N \geq 83)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(\mathbf{2N} + \mathbf{223}) &= B_{\bar{N}}(2N + 223 - B_{\bar{N}}(2N + 222)) + B_{\bar{N}}(2N + 223 - B_{\bar{N}}(2N + 221)) + B_{\bar{N}}(2N + 223 - B_{\bar{N}}(2N + 220)) \\
&= B_{\bar{N}}(2N + 223 - (2N - 70)) + B_{\bar{N}}(2N + 223 - (N + 249)) + B_{\bar{N}}(2N + 223 - (N + 288)) \\
&= B_{\bar{N}}(293) + B_{\bar{N}}(N - 26) + B_{\bar{N}}(N - 65) = 293 + (N - 26) + (N - 65) = \mathbf{2N} + \mathbf{202} \\
&(N \geq 293)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(\mathbf{2N} + \mathbf{224}) &= B_{\bar{N}}(2N + 224 - B_{\bar{N}}(2N + 223)) + B_{\bar{N}}(2N + 224 - B_{\bar{N}}(2N + 222)) + B_{\bar{N}}(2N + 224 - B_{\bar{N}}(2N + 221)) \\
&= B_{\bar{N}}(2N + 224 - (2N + 202)) + B_{\bar{N}}(2N + 224 - (2N - 70)) + B_{\bar{N}}(2N + 224 - (N + 249)) \\
&= B_{\bar{N}}(22) + B_{\bar{N}}(294) + B_{\bar{N}}(N - 25) = 22 + 294 + (N - 25) = \mathbf{N} + \mathbf{291} \\
&(N \geq 294)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(\mathbf{2N} + \mathbf{225}) &= B_{\bar{N}}(2N + 225 - B_{\bar{N}}(2N + 224)) + B_{\bar{N}}(2N + 225 - B_{\bar{N}}(2N + 223)) + B_{\bar{N}}(2N + 225 - B_{\bar{N}}(2N + 222)) \\
&= B_{\bar{N}}(2N + 225 - (N + 291)) + B_{\bar{N}}(2N + 225 - (2N + 202)) + B_{\bar{N}}(2N + 225 - (2N - 70)) \\
&= B_{\bar{N}}(N - 66) + B_{\bar{N}}(23) + B_{\bar{N}}(295) = (N - 66) + 23 + 295 = \mathbf{N} + \mathbf{252} \\
&(N \geq 295)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(\mathbf{2N} + \mathbf{226}) &= B_{\bar{N}}(2N + 226 - B_{\bar{N}}(2N + 225)) + B_{\bar{N}}(2N + 226 - B_{\bar{N}}(2N + 224)) + B_{\bar{N}}(2N + 226 - B_{\bar{N}}(2N + 223)) \\
&= B_{\bar{N}}(2N + 226 - (N + 252)) + B_{\bar{N}}(2N + 226 - (N + 291)) + B_{\bar{N}}(2N + 226 - (2N + 202)) \\
&= B_{\bar{N}}(N - 26) + B_{\bar{N}}(N - 65) + B_{\bar{N}}(24) = (N - 26) + (N - 65) + 24 = \mathbf{2N} - \mathbf{67} \\
&(N \geq 161)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(\mathbf{2N} + \mathbf{227}) &= B_{\bar{N}}(2N + 227 - B_{\bar{N}}(2N + 226)) + B_{\bar{N}}(2N + 227 - B_{\bar{N}}(2N + 225)) + B_{\bar{N}}(2N + 227 - B_{\bar{N}}(2N + 224)) \\
&= B_{\bar{N}}(2N + 227 - (2N - 67)) + B_{\bar{N}}(2N + 227 - (N + 252)) + B_{\bar{N}}(2N + 227 - (N + 291)) \\
&= B_{\bar{N}}(294) + B_{\bar{N}}(N - 25) + B_{\bar{N}}(N - 64) = 294 + (N - 25) + (N - 64) = \mathbf{2N} + \mathbf{205} \\
&(N \geq 294)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(\mathbf{2N} + \mathbf{228}) &= B_{\bar{N}}(2N + 228 - B_{\bar{N}}(2N + 227)) + B_{\bar{N}}(2N + 228 - B_{\bar{N}}(2N + 226)) + B_{\bar{N}}(2N + 228 - B_{\bar{N}}(2N + 225)) \\
&= B_{\bar{N}}(2N + 228 - (2N + 205)) + B_{\bar{N}}(2N + 228 - (2N - 67)) + B_{\bar{N}}(2N + 228 - (N + 252)) \\
&= B_{\bar{N}}(23) + B_{\bar{N}}(295) + B_{\bar{N}}(N - 24) = 23 + 295 + (N - 24) = \mathbf{N} + \mathbf{294} \\
&(N \geq 295)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(\mathbf{2N} + \mathbf{229}) &= B_{\bar{N}}(2N + 229 - B_{\bar{N}}(2N + 228)) + B_{\bar{N}}(2N + 229 - B_{\bar{N}}(2N + 227)) + B_{\bar{N}}(2N + 229 - B_{\bar{N}}(2N + 226)) \\
&= B_{\bar{N}}(2N + 229 - (N + 294)) + B_{\bar{N}}(2N + 229 - (2N + 205)) + B_{\bar{N}}(2N + 229 - (2N - 67)) \\
&= B_{\bar{N}}(N - 65) + B_{\bar{N}}(24) + B_{\bar{N}}(296) = (N - 65) + 24 + 296 = \mathbf{N} + \mathbf{255} \\
&(N \geq 296)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(\mathbf{2N} + \mathbf{230}) &= B_{\bar{N}}(2N + 230 - B_{\bar{N}}(2N + 229)) + B_{\bar{N}}(2N + 230 - B_{\bar{N}}(2N + 228)) + B_{\bar{N}}(2N + 230 - B_{\bar{N}}(2N + 227)) \\
&= B_{\bar{N}}(2N + 230 - (N + 255)) + B_{\bar{N}}(2N + 230 - (N + 294)) + B_{\bar{N}}(2N + 230 - (2N + 205)) \\
&= B_{\bar{N}}(N - 25) + B_{\bar{N}}(N - 64) + B_{\bar{N}}(25) = (N - 25) + (N - 64) + 25 = \mathbf{2N} - \mathbf{64} \\
&(N \geq 229)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(\mathbf{2N} + \mathbf{231}) &= B_{\bar{N}}(2N + 231 - B_{\bar{N}}(2N + 230)) + B_{\bar{N}}(2N + 231 - B_{\bar{N}}(2N + 229)) + B_{\bar{N}}(2N + 231 - B_{\bar{N}}(2N + 228)) \\
&= B_{\bar{N}}(2N + 231 - (2N - 64)) + B_{\bar{N}}(2N + 231 - (N + 255)) + B_{\bar{N}}(2N + 231 - (N + 294)) \\
&= B_{\bar{N}}(295) + B_{\bar{N}}(N - 24) + B_{\bar{N}}(N - 63) = 295 + (N - 24) + (N - 63) = \mathbf{2N} + \mathbf{208} \\
&(N \geq 295)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(\mathbf{2N} + \mathbf{232}) &= B_{\bar{N}}(2N + 232 - B_{\bar{N}}(2N + 231)) + B_{\bar{N}}(2N + 232 - B_{\bar{N}}(2N + 230)) + B_{\bar{N}}(2N + 232 - B_{\bar{N}}(2N + 229)) \\
&= B_{\bar{N}}(2N + 232 - (2N + 208)) + B_{\bar{N}}(2N + 232 - (2N - 64)) + B_{\bar{N}}(2N + 232 - (N + 255)) \\
&= B_{\bar{N}}(24) + B_{\bar{N}}(296) + B_{\bar{N}}(N - 23) = 24 + 296 + (N - 23) = \mathbf{N} + \mathbf{297} \\
&(N \geq 296)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(\mathbf{2N} + \mathbf{233}) &= B_{\bar{N}}(2N + 233 - B_{\bar{N}}(2N + 232)) + B_{\bar{N}}(2N + 233 - B_{\bar{N}}(2N + 231)) + B_{\bar{N}}(2N + 233 - B_{\bar{N}}(2N + 230)) \\
&= B_{\bar{N}}(2N + 233 - (N + 297)) + B_{\bar{N}}(2N + 233 - (2N + 208)) + B_{\bar{N}}(2N + 233 - (2N - 64)) \\
&= B_{\bar{N}}(N - 64) + B_{\bar{N}}(25) + B_{\bar{N}}(297) = (N - 64) + 25 + 297 = \mathbf{N} + \mathbf{258} \\
&(N \geq 297)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(\mathbf{2N} + \mathbf{234}) &= B_{\bar{N}}(2N + 234 - B_{\bar{N}}(2N + 233)) + B_{\bar{N}}(2N + 234 - B_{\bar{N}}(2N + 232)) + B_{\bar{N}}(2N + 234 - B_{\bar{N}}(2N + 231)) \\
&= B_{\bar{N}}(2N + 234 - (N + 258)) + B_{\bar{N}}(2N + 234 - (N + 297)) + B_{\bar{N}}(2N + 234 - (2N + 208)) \\
&= B_{\bar{N}}(N - 24) + B_{\bar{N}}(N - 63) + B_{\bar{N}}(26) = (N - 24) + (N - 63) + 26 = \mathbf{2N} - \mathbf{61} \\
&(N \geq 155)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + \mathbf{235}) &= B_{\bar{N}}(2N + 235 - B_{\bar{N}}(2N + 234)) + B_{\bar{N}}(2N + 235 - B_{\bar{N}}(2N + 233)) + B_{\bar{N}}(2N + 235 - B_{\bar{N}}(2N + 232)) \\
&= B_{\bar{N}}(2N + 235 - (2N - 61)) + B_{\bar{N}}(2N + 235 - (N + 258)) + B_{\bar{N}}(2N + 235 - (N + 297)) \\
&= B_{\bar{N}}(296) + B_{\bar{N}}(N - 23) + B_{\bar{N}}(N - 62) = 296 + (N - 23) + (N - 62) = \mathbf{2N} + \mathbf{211} \\
&(N \geq 296)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + \mathbf{236}) &= B_{\bar{N}}(2N + 236 - B_{\bar{N}}(2N + 235)) + B_{\bar{N}}(2N + 236 - B_{\bar{N}}(2N + 234)) + B_{\bar{N}}(2N + 236 - B_{\bar{N}}(2N + 233)) \\
&= B_{\bar{N}}(2N + 236 - (2N + 211)) + B_{\bar{N}}(2N + 236 - (2N - 61)) + B_{\bar{N}}(2N + 236 - (N + 258)) \\
&= B_{\bar{N}}(25) + B_{\bar{N}}(297) + B_{\bar{N}}(N - 22) = 25 + 297 + (N - 22) = \mathbf{N} + \mathbf{300} \\
&(\mathbf{N} \geq \mathbf{365})
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + \mathbf{237}) &= B_{\bar{N}}(2N + 237 - B_{\bar{N}}(2N + 236)) + B_{\bar{N}}(2N + 237 - B_{\bar{N}}(2N + 235)) + B_{\bar{N}}(2N + 237 - B_{\bar{N}}(2N + 234)) \\
&= B_{\bar{N}}(2N + 237 - (N + 300)) + B_{\bar{N}}(2N + 237 - (2N + 211)) + B_{\bar{N}}(2N + 237 - (2N - 61)) \\
&= B_{\bar{N}}(N - 63) + B_{\bar{N}}(26) + B_{\bar{N}}(298) = (N - 63) + 26 + 298 = \mathbf{N} + \mathbf{261} \\
&(\mathbf{N} \geq \mathbf{366})
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + \mathbf{238}) &= B_{\bar{N}}(2N + 238 - B_{\bar{N}}(2N + 237)) + B_{\bar{N}}(2N + 238 - B_{\bar{N}}(2N + 236)) + B_{\bar{N}}(2N + 238 - B_{\bar{N}}(2N + 235)) \\
&= B_{\bar{N}}(2N + 238 - (N + 261)) + B_{\bar{N}}(2N + 238 - (N + 300)) + B_{\bar{N}}(2N + 238 - (2N + 211)) \\
&= B_{\bar{N}}(N - 23) + B_{\bar{N}}(N - 62) + B_{\bar{N}}(27) = (N - 23) + (N - 62) + 27 = \mathbf{2N} - \mathbf{58} \\
&(\mathbf{N} \geq \mathbf{367})
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + \mathbf{239}) &= B_{\bar{N}}(2N + 239 - B_{\bar{N}}(2N + 238)) + B_{\bar{N}}(2N + 239 - B_{\bar{N}}(2N + 237)) + B_{\bar{N}}(2N + 239 - B_{\bar{N}}(2N + 236)) \\
&= B_{\bar{N}}(2N + 239 - (2N - 58)) + B_{\bar{N}}(2N + 239 - (N + 261)) + B_{\bar{N}}(2N + 239 - (N + 300)) \\
&= B_{\bar{N}}(297) + B_{\bar{N}}(N - 22) + B_{\bar{N}}(N - 61) = 297 + (N - 22) + (N - 61) = \mathbf{2N} + \mathbf{214} \\
&(N \geq 297)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 240) &= B_{\bar{N}}(2N + 240 - B_{\bar{N}}(2N + 239)) + B_{\bar{N}}(2N + 240 - B_{\bar{N}}(2N + 238)) + B_{\bar{N}}(2N + 240 - B_{\bar{N}}(2N + 237)) \\
&= B_{\bar{N}}(2N + 240 - (2N + 214)) + B_{\bar{N}}(2N + 240 - (2N - 58)) + B_{\bar{N}}(2N + 240 - (N + 261)) \\
&= B_{\bar{N}}(26) + B_{\bar{N}}(298) + B_{\bar{N}}(N - 21) = 26 + 298 + (N - 21) = \mathbf{N} + \mathbf{303} \\
&(N \geq 298)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 241) &= B_{\bar{N}}(2N + 241 - B_{\bar{N}}(2N + 240)) + B_{\bar{N}}(2N + 241 - B_{\bar{N}}(2N + 239)) + B_{\bar{N}}(2N + 241 - B_{\bar{N}}(2N + 238)) \\
&= B_{\bar{N}}(2N + 241 - (N + 303)) + B_{\bar{N}}(2N + 241 - (2N + 214)) + B_{\bar{N}}(2N + 241 - (2N - 58)) \\
&= B_{\bar{N}}(N - 62) + B_{\bar{N}}(27) + B_{\bar{N}}(299) = (N - 62) + 27 + 299 = \mathbf{N} + \mathbf{264} \\
&(N \geq 299)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 242) &= B_{\bar{N}}(2N + 242 - B_{\bar{N}}(2N + 241)) + B_{\bar{N}}(2N + 242 - B_{\bar{N}}(2N + 240)) + B_{\bar{N}}(2N + 242 - B_{\bar{N}}(2N + 239)) \\
&= B_{\bar{N}}(2N + 242 - (N + 264)) + B_{\bar{N}}(2N + 242 - (N + 303)) + B_{\bar{N}}(2N + 242 - (2N + 214)) \\
&= B_{\bar{N}}(N - 22) + B_{\bar{N}}(N - 61) + B_{\bar{N}}(28) = (N - 22) + (N - 61) + 28 = \mathbf{2N} - \mathbf{55} \\
&(N \geq 123)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 243) &= B_{\bar{N}}(2N + 243 - B_{\bar{N}}(2N + 242)) + B_{\bar{N}}(2N + 243 - B_{\bar{N}}(2N + 241)) + B_{\bar{N}}(2N + 243 - B_{\bar{N}}(2N + 240)) \\
&= B_{\bar{N}}(2N + 243 - (2N - 55)) + B_{\bar{N}}(2N + 243 - (N + 264)) + B_{\bar{N}}(2N + 243 - (N + 303)) \\
&= B_{\bar{N}}(298) + B_{\bar{N}}(N - 21) + B_{\bar{N}}(N - 60) = 298 + (N - 21) + (N - 60) = \mathbf{2N} + \mathbf{217} \\
&(N \geq 298)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 244) &= B_{\bar{N}}(2N + 244 - B_{\bar{N}}(2N + 243)) + B_{\bar{N}}(2N + 244 - B_{\bar{N}}(2N + 242)) + B_{\bar{N}}(2N + 244 - B_{\bar{N}}(2N + 241)) \\
&= B_{\bar{N}}(2N + 244 - (2N + 217)) + B_{\bar{N}}(2N + 244 - (2N - 55)) + B_{\bar{N}}(2N + 244 - (N + 264)) \\
&= B_{\bar{N}}(27) + B_{\bar{N}}(299) + B_{\bar{N}}(N - 20) = 27 + 299 + (N - 20) = \mathbf{N} + \mathbf{306} \\
&(N \geq 299)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 245) &= B_{\bar{N}}(2N + 245 - B_{\bar{N}}(2N + 244)) + B_{\bar{N}}(2N + 245 - B_{\bar{N}}(2N + 243)) + B_{\bar{N}}(2N + 245 - B_{\bar{N}}(2N + 242)) \\
&= B_{\bar{N}}(2N + 245 - (N + 306)) + B_{\bar{N}}(2N + 245 - (2N + 217)) + B_{\bar{N}}(2N + 245 - (2N - 55)) \\
&= B_{\bar{N}}(N - 61) + B_{\bar{N}}(28) + B_{\bar{N}}(300) = (N - 61) + 28 + 300 = \mathbf{N} + \mathbf{267} \\
&(N \geq 300)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 246) &= B_{\bar{N}}(2N + 246 - B_{\bar{N}}(2N + 245)) + B_{\bar{N}}(2N + 246 - B_{\bar{N}}(2N + 244)) + B_{\bar{N}}(2N + 246 - B_{\bar{N}}(2N + 243)) \\
&= B_{\bar{N}}(2N + 246 - (N + 267)) + B_{\bar{N}}(2N + 246 - (N + 306)) + B_{\bar{N}}(2N + 246 - (2N + 217)) \\
&= B_{\bar{N}}(N - 21) + B_{\bar{N}}(N - 60) + B_{\bar{N}}(29) = (N - 21) + (N - 60) + 29 = \mathbf{2N} - \mathbf{52} \\
&(N \geq 96)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 247) &= B_{\bar{N}}(2N + 247 - B_{\bar{N}}(2N + 246)) + B_{\bar{N}}(2N + 247 - B_{\bar{N}}(2N + 245)) + B_{\bar{N}}(2N + 247 - B_{\bar{N}}(2N + 244)) \\
&= B_{\bar{N}}(2N + 247 - (2N - 52)) + B_{\bar{N}}(2N + 247 - (N + 267)) + B_{\bar{N}}(2N + 247 - (N + 306)) \\
&= B_{\bar{N}}(299) + B_{\bar{N}}(N - 20) + B_{\bar{N}}(N - 59) = 299 + (N - 20) + (N - 59) = \mathbf{2N} + \mathbf{220} \\
&(N \geq 299)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 248) &= B_{\bar{N}}(2N + 248 - B_{\bar{N}}(2N + 247)) + B_{\bar{N}}(2N + 248 - B_{\bar{N}}(2N + 246)) + B_{\bar{N}}(2N + 248 - B_{\bar{N}}(2N + 245)) \\
&= B_{\bar{N}}(2N + 248 - (2N + 220)) + B_{\bar{N}}(2N + 248 - (2N - 52)) + B_{\bar{N}}(2N + 248 - (N + 267)) \\
&= B_{\bar{N}}(28) + B_{\bar{N}}(300) + B_{\bar{N}}(N - 19) = 28 + 300 + (N - 19) = \mathbf{N} + \mathbf{309} \\
&(N \geq 300)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 249) &= B_{\bar{N}}(2N + 249 - B_{\bar{N}}(2N + 248)) + B_{\bar{N}}(2N + 249 - B_{\bar{N}}(2N + 247)) + B_{\bar{N}}(2N + 249 - B_{\bar{N}}(2N + 246)) \\
&= B_{\bar{N}}(2N + 249 - (N + 309)) + B_{\bar{N}}(2N + 249 - (2N + 220)) + B_{\bar{N}}(2N + 249 - (2N - 52)) \\
&= B_{\bar{N}}(N - 60) + B_{\bar{N}}(29) + B_{\bar{N}}(301) = (N - 60) + 29 + 301 = \mathbf{N} + \mathbf{270} \\
&(N \geq 301)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 250) &= B_{\bar{N}}(2N + 250 - B_{\bar{N}}(2N + 249)) + B_{\bar{N}}(2N + 250 - B_{\bar{N}}(2N + 248)) + B_{\bar{N}}(2N + 250 - B_{\bar{N}}(2N + 247)) \\
&= B_{\bar{N}}(2N + 250 - (N + 270)) + B_{\bar{N}}(2N + 250 - (N + 309)) + B_{\bar{N}}(2N + 250 - (2N + 220)) \\
&= B_{\bar{N}}(N - 20) + B_{\bar{N}}(N - 59) + B_{\bar{N}}(30) = (N - 20) + (N - 59) + 30 = \mathbf{2N} - \mathbf{49} \\
&(N \geq 216)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 251) &= B_{\bar{N}}(2N + 251 - B_{\bar{N}}(2N + 250)) + B_{\bar{N}}(2N + 251 - B_{\bar{N}}(2N + 249)) + B_{\bar{N}}(2N + 251 - B_{\bar{N}}(2N + 248)) \\
&= B_{\bar{N}}(2N + 251 - (2N - 49)) + B_{\bar{N}}(2N + 251 - (N + 270)) + B_{\bar{N}}(2N + 251 - (N + 309)) \\
&= B_{\bar{N}}(300) + B_{\bar{N}}(N - 19) + B_{\bar{N}}(N - 58) = 300 + (N - 19) + (N - 58) = \mathbf{2N} + \mathbf{223} \\
&(N \geq 324)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 252) &= B_{\bar{N}}(2N + 252 - B_{\bar{N}}(2N + 251)) + B_{\bar{N}}(2N + 252 - B_{\bar{N}}(2N + 250)) + B_{\bar{N}}(2N + 252 - B_{\bar{N}}(2N + 249)) \\
&= B_{\bar{N}}(2N + 252 - (2N + 223)) + B_{\bar{N}}(2N + 252 - (2N - 49)) + B_{\bar{N}}(2N + 252 - (N + 270)) \\
&= B_{\bar{N}}(29) + B_{\bar{N}}(301) + B_{\bar{N}}(N - 18) = 29 + 301 + (N - 18) = \mathbf{N} + \mathbf{312} \\
&(N \geq 323)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 253) &= B_{\bar{N}}(2N + 253 - B_{\bar{N}}(2N + 252)) + B_{\bar{N}}(2N + 253 - B_{\bar{N}}(2N + 251)) + B_{\bar{N}}(2N + 253 - B_{\bar{N}}(2N + 250)) \\
&= B_{\bar{N}}(2N + 253 - (N + 312)) + B_{\bar{N}}(2N + 253 - (2N + 223)) + B_{\bar{N}}(2N + 253 - (2N - 49)) \\
&= B_{\bar{N}}(N - 59) + B_{\bar{N}}(30) + B_{\bar{N}}(302) = (N - 59) + 30 + 302 = \mathbf{N} + \mathbf{273} \\
&(N \geq 322)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 254) &= B_{\bar{N}}(2N + 254 - B_{\bar{N}}(2N + 253)) + B_{\bar{N}}(2N + 254 - B_{\bar{N}}(2N + 252)) + B_{\bar{N}}(2N + 254 - B_{\bar{N}}(2N + 251)) \\
&= B_{\bar{N}}(2N + 254 - (N + 273)) + B_{\bar{N}}(2N + 254 - (N + 312)) + B_{\bar{N}}(2N + 254 - (2N + 223)) \\
&= B_{\bar{N}}(N - 19) + B_{\bar{N}}(N - 58) + B_{\bar{N}}(31) = (N - 19) + (N - 58) + 31 = \mathbf{2N} - \mathbf{46} \\
&(\mathbf{N} \geq \mathbf{2087})
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 255) &= B_{\bar{N}}(2N + 255 - B_{\bar{N}}(2N + 254)) + B_{\bar{N}}(2N + 255 - B_{\bar{N}}(2N + 253)) + B_{\bar{N}}(2N + 255 - B_{\bar{N}}(2N + 252)) \\
&= B_{\bar{N}}(2N + 255 - (2N - 46)) + B_{\bar{N}}(2N + 255 - (N + 273)) + B_{\bar{N}}(2N + 255 - (N + 312)) \\
&= B_{\bar{N}}(301) + B_{\bar{N}}(N - 18) + B_{\bar{N}}(N - 57) = 301 + (N - 18) + (N - 57) = \mathbf{2N} + \mathbf{226} \\
&(N \geq 301)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 256) &= B_{\bar{N}}(2N + 256 - B_{\bar{N}}(2N + 255)) + B_{\bar{N}}(2N + 256 - B_{\bar{N}}(2N + 254)) + B_{\bar{N}}(2N + 256 - B_{\bar{N}}(2N + 253)) \\
&= B_{\bar{N}}(2N + 256 - (2N + 226)) + B_{\bar{N}}(2N + 256 - (2N - 46)) + B_{\bar{N}}(2N + 256 - (N + 273)) \\
&= B_{\bar{N}}(30) + B_{\bar{N}}(302) + B_{\bar{N}}(N - 17) = 30 + 302 + (N - 17) = \mathbf{N} + \mathbf{315} \\
&(N \geq 302)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 257) &= B_{\bar{N}}(2N + 257 - B_{\bar{N}}(2N + 256)) + B_{\bar{N}}(2N + 257 - B_{\bar{N}}(2N + 255)) + B_{\bar{N}}(2N + 257 - B_{\bar{N}}(2N + 254)) \\
&= B_{\bar{N}}(2N + 257 - (N + 315)) + B_{\bar{N}}(2N + 257 - (2N + 226)) + B_{\bar{N}}(2N + 257 - (2N - 46)) \\
&= B_{\bar{N}}(N - 58) + B_{\bar{N}}(31) + B_{\bar{N}}(303) = (N - 58) + 31 + 303 = \mathbf{N} + \mathbf{276} \\
&(N \geq 303)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 258) &= B_{\bar{N}}(2N + 258 - B_{\bar{N}}(2N + 257)) + B_{\bar{N}}(2N + 258 - B_{\bar{N}}(2N + 256)) + B_{\bar{N}}(2N + 258 - B_{\bar{N}}(2N + 255)) \\
&= B_{\bar{N}}(2N + 258 - (N + 276)) + B_{\bar{N}}(2N + 258 - (N + 315)) + B_{\bar{N}}(2N + 258 - (2N + 226)) \\
&= B_{\bar{N}}(N - 18) + B_{\bar{N}}(N - 57) + B_{\bar{N}}(32) = (N - 18) + (N - 57) + 32 = \mathbf{2N} - \mathbf{43} \\
&(N \geq 58)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 259) &= B_{\bar{N}}(2N + 259 - B_{\bar{N}}(2N + 258)) + B_{\bar{N}}(2N + 259 - B_{\bar{N}}(2N + 257)) + B_{\bar{N}}(2N + 259 - B_{\bar{N}}(2N + 256)) \\
&= B_{\bar{N}}(2N + 259 - (2N - 43)) + B_{\bar{N}}(2N + 259 - (N + 276)) + B_{\bar{N}}(2N + 259 - (N + 315)) \\
&= B_{\bar{N}}(302) + B_{\bar{N}}(N - 17) + B_{\bar{N}}(N - 56) = 302 + (N - 17) + (N - 56) = \mathbf{2N} + \mathbf{229} \\
&(N \geq 302)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 260) &= B_{\bar{N}}(2N + 260 - B_{\bar{N}}(2N + 259)) + B_{\bar{N}}(2N + 260 - B_{\bar{N}}(2N + 258)) + B_{\bar{N}}(2N + 260 - B_{\bar{N}}(2N + 257)) \\
&= B_{\bar{N}}(2N + 260 - (2N + 229)) + B_{\bar{N}}(2N + 260 - (2N - 43)) + B_{\bar{N}}(2N + 260 - (N + 276)) \\
&= B_{\bar{N}}(31) + B_{\bar{N}}(303) + B_{\bar{N}}(N - 16) = 31 + 303 + (N - 16) = \mathbf{N} + \mathbf{318} \\
&(N \geq 303)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 261) &= B_{\bar{N}}(2N + 261 - B_{\bar{N}}(2N + 260)) + B_{\bar{N}}(2N + 261 - B_{\bar{N}}(2N + 259)) + B_{\bar{N}}(2N + 261 - B_{\bar{N}}(2N + 258)) \\
&= B_{\bar{N}}(2N + 261 - (N + 318)) + B_{\bar{N}}(2N + 261 - (2N + 229)) + B_{\bar{N}}(2N + 261 - (2N - 43)) \\
&= B_{\bar{N}}(N - 57) + B_{\bar{N}}(32) + B_{\bar{N}}(304) = (N - 57) + 32 + 304 = \mathbf{N} + \mathbf{279} \\
&(N \geq 304)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 262) &= B_{\bar{N}}(2N + 262 - B_{\bar{N}}(2N + 261)) + B_{\bar{N}}(2N + 262 - B_{\bar{N}}(2N + 260)) + B_{\bar{N}}(2N + 262 - B_{\bar{N}}(2N + 259)) \\
&= B_{\bar{N}}(2N + 262 - (N + 279)) + B_{\bar{N}}(2N + 262 - (N + 318)) + B_{\bar{N}}(2N + 262 - (2N + 229)) \\
&= B_{\bar{N}}(N - 17) + B_{\bar{N}}(N - 56) + B_{\bar{N}}(33) = (N - 17) + (N - 56) + 33 = \mathbf{2N} - \mathbf{40} \\
&(N \geq 57)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 263) &= B_{\bar{N}}(2N + 263 - B_{\bar{N}}(2N + 262)) + B_{\bar{N}}(2N + 263 - B_{\bar{N}}(2N + 261)) + B_{\bar{N}}(2N + 263 - B_{\bar{N}}(2N + 260)) \\
&= B_{\bar{N}}(2N + 263 - (2N - 40)) + B_{\bar{N}}(2N + 263 - (N + 279)) + B_{\bar{N}}(2N + 263 - (N + 318)) \\
&= B_{\bar{N}}(303) + B_{\bar{N}}(N - 16) + B_{\bar{N}}(N - 55) = 303 + (N - 16) + (N - 55) = \mathbf{2N} + \mathbf{232} \\
&(N \geq 303)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 264) &= B_{\bar{N}}(2N + 264 - B_{\bar{N}}(2N + 263)) + B_{\bar{N}}(2N + 264 - B_{\bar{N}}(2N + 262)) + B_{\bar{N}}(2N + 264 - B_{\bar{N}}(2N + 261)) \\
&= B_{\bar{N}}(2N + 264 - (2N + 232)) + B_{\bar{N}}(2N + 264 - (2N - 40)) + B_{\bar{N}}(2N + 264 - (N + 279)) \\
&= B_{\bar{N}}(32) + B_{\bar{N}}(304) + B_{\bar{N}}(N - 15) = 32 + 304 + (N - 15) = \mathbf{N} + \mathbf{321} \\
&(N \geq 304)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 265) &= B_{\bar{N}}(2N + 265 - B_{\bar{N}}(2N + 264)) + B_{\bar{N}}(2N + 265 - B_{\bar{N}}(2N + 263)) + B_{\bar{N}}(2N + 265 - B_{\bar{N}}(2N + 262)) \\
&= B_{\bar{N}}(2N + 265 - (N + 321)) + B_{\bar{N}}(2N + 265 - (2N + 232)) + B_{\bar{N}}(2N + 265 - (2N - 40)) \\
&= B_{\bar{N}}(N - 56) + B_{\bar{N}}(33) + B_{\bar{N}}(305) = (N - 56) + 33 + 305 = \mathbf{N} + \mathbf{282} \\
&(N \geq 305)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 266) &= B_{\bar{N}}(2N + 266 - B_{\bar{N}}(2N + 265)) + B_{\bar{N}}(2N + 266 - B_{\bar{N}}(2N + 264)) + B_{\bar{N}}(2N + 266 - B_{\bar{N}}(2N + 263)) \\
&= B_{\bar{N}}(2N + 266 - (N + 282)) + B_{\bar{N}}(2N + 266 - (N + 321)) + B_{\bar{N}}(2N + 266 - (2N + 232)) \\
&= B_{\bar{N}}(N - 16) + B_{\bar{N}}(N - 55) + B_{\bar{N}}(34) = (N - 16) + (N - 55) + 34 = \mathbf{2N} - \mathbf{37} \\
&(N \geq 56)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 267) &= B_{\bar{N}}(2N + 267 - B_{\bar{N}}(2N + 266)) + B_{\bar{N}}(2N + 267 - B_{\bar{N}}(2N + 265)) + B_{\bar{N}}(2N + 267 - B_{\bar{N}}(2N + 264)) \\
&= B_{\bar{N}}(2N + 267 - (2N - 37)) + B_{\bar{N}}(2N + 267 - (N + 282)) + B_{\bar{N}}(2N + 267 - (N + 321)) \\
&= B_{\bar{N}}(304) + B_{\bar{N}}(N - 15) + B_{\bar{N}}(N - 54) = 304 + (N - 15) + (N - 54) = \mathbf{2N} + \mathbf{235} \\
&(N \geq 304)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 268) &= B_{\bar{N}}(2N + 268 - B_{\bar{N}}(2N + 267)) + B_{\bar{N}}(2N + 268 - B_{\bar{N}}(2N + 266)) + B_{\bar{N}}(2N + 268 - B_{\bar{N}}(2N + 265)) \\
&= B_{\bar{N}}(2N + 268 - (2N + 235)) + B_{\bar{N}}(2N + 268 - (2N - 37)) + B_{\bar{N}}(2N + 268 - (N + 282)) \\
&= B_{\bar{N}}(33) + B_{\bar{N}}(305) + B_{\bar{N}}(N - 14) = 33 + 305 + (N - 14) = \mathbf{N} + \mathbf{324} \\
&(N \geq 305)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 269) &= B_{\bar{N}}(2N + 269 - B_{\bar{N}}(2N + 268)) + B_{\bar{N}}(2N + 269 - B_{\bar{N}}(2N + 267)) + B_{\bar{N}}(2N + 269 - B_{\bar{N}}(2N + 266)) \\
&= B_{\bar{N}}(2N + 269 - (N + 324)) + B_{\bar{N}}(2N + 269 - (2N + 235)) + B_{\bar{N}}(2N + 269 - (2N - 37)) \\
&= B_{\bar{N}}(N - 55) + B_{\bar{N}}(34) + B_{\bar{N}}(306) = (N - 55) + 34 + 306 = \mathbf{N} + \mathbf{285} \\
&(N \geq 306)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 270) &= B_{\bar{N}}(2N + 270 - B_{\bar{N}}(2N + 269)) + B_{\bar{N}}(2N + 270 - B_{\bar{N}}(2N + 268)) + B_{\bar{N}}(2N + 270 - B_{\bar{N}}(2N + 267)) \\
&= B_{\bar{N}}(2N + 270 - (N + 285)) + B_{\bar{N}}(2N + 270 - (N + 324)) + B_{\bar{N}}(2N + 270 - (2N + 235)) \\
&= B_{\bar{N}}(N - 15) + B_{\bar{N}}(N - 54) + B_{\bar{N}}(35) = (N - 15) + (N - 54) + 35 = \mathbf{2N} - \mathbf{34} \\
&(N \geq 55)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 271) &= B_{\bar{N}}(2N + 271 - B_{\bar{N}}(2N + 270)) + B_{\bar{N}}(2N + 271 - B_{\bar{N}}(2N + 269)) + B_{\bar{N}}(2N + 271 - B_{\bar{N}}(2N + 268)) \\
&= B_{\bar{N}}(2N + 271 - (2N - 34)) + B_{\bar{N}}(2N + 271 - (N + 285)) + B_{\bar{N}}(2N + 271 - (N + 324)) \\
&= B_{\bar{N}}(305) + B_{\bar{N}}(N - 14) + B_{\bar{N}}(N - 53) = 305 + (N - 14) + (N - 53) = \mathbf{2N} + \mathbf{238} \\
&(N \geq 305)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 272) &= B_{\bar{N}}(2N + 272 - B_{\bar{N}}(2N + 271)) + B_{\bar{N}}(2N + 272 - B_{\bar{N}}(2N + 270)) + B_{\bar{N}}(2N + 272 - B_{\bar{N}}(2N + 269)) \\
&= B_{\bar{N}}(2N + 272 - (2N + 238)) + B_{\bar{N}}(2N + 272 - (2N - 34)) + B_{\bar{N}}(2N + 272 - (N + 285)) \\
&= B_{\bar{N}}(34) + B_{\bar{N}}(306) + B_{\bar{N}}(N - 13) = 34 + 306 + (N - 13) = \mathbf{N} + \mathbf{327} \\
&(N \geq 306)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 273) &= B_{\bar{N}}(2N + 273 - B_{\bar{N}}(2N + 272)) + B_{\bar{N}}(2N + 273 - B_{\bar{N}}(2N + 271)) + B_{\bar{N}}(2N + 273 - B_{\bar{N}}(2N + 270)) \\
&= B_{\bar{N}}(2N + 273 - (N + 327)) + B_{\bar{N}}(2N + 273 - (2N + 238)) + B_{\bar{N}}(2N + 273 - (2N - 34)) \\
&= B_{\bar{N}}(N - 54) + B_{\bar{N}}(35) + B_{\bar{N}}(307) = (N - 54) + 35 + 307 = \mathbf{N} + \mathbf{288} \\
&(N \geq 307)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 274) &= B_{\bar{N}}(2N + 274 - B_{\bar{N}}(2N + 273)) + B_{\bar{N}}(2N + 274 - B_{\bar{N}}(2N + 272)) + B_{\bar{N}}(2N + 274 - B_{\bar{N}}(2N + 271)) \\
&= B_{\bar{N}}(2N + 274 - (N + 288)) + B_{\bar{N}}(2N + 274 - (N + 327)) + B_{\bar{N}}(2N + 274 - (2N + 238)) \\
&= B_{\bar{N}}(N - 14) + B_{\bar{N}}(N - 53) + B_{\bar{N}}(36) = (N - 14) + (N - 53) + 36 = \mathbf{2N} - \mathbf{31} \\
&(N \geq 54)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 275) &= B_{\bar{N}}(2N + 275 - B_{\bar{N}}(2N + 274)) + B_{\bar{N}}(2N + 275 - B_{\bar{N}}(2N + 273)) + B_{\bar{N}}(2N + 275 - B_{\bar{N}}(2N + 272)) \\
&= B_{\bar{N}}(2N + 275 - (2N - 31)) + B_{\bar{N}}(2N + 275 - (N + 288)) + B_{\bar{N}}(2N + 275 - (N + 327)) \\
&= B_{\bar{N}}(306) + B_{\bar{N}}(N - 13) + B_{\bar{N}}(N - 52) = 306 + (N - 13) + (N - 52) = \mathbf{2N} + \mathbf{241} \\
&(N \geq 306)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 276) &= B_{\bar{N}}(2N + 276 - B_{\bar{N}}(2N + 275)) + B_{\bar{N}}(2N + 276 - B_{\bar{N}}(2N + 274)) + B_{\bar{N}}(2N + 276 - B_{\bar{N}}(2N + 273)) \\
&= B_{\bar{N}}(2N + 276 - (2N + 241)) + B_{\bar{N}}(2N + 276 - (2N - 31)) + B_{\bar{N}}(2N + 276 - (N + 288)) \\
&= B_{\bar{N}}(35) + B_{\bar{N}}(307) + B_{\bar{N}}(N - 12) = 35 + 307 + (N - 12) = \mathbf{N} + \mathbf{330} \\
&(N \geq 307)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 277) &= B_{\bar{N}}(2N + 277 - B_{\bar{N}}(2N + 276)) + B_{\bar{N}}(2N + 277 - B_{\bar{N}}(2N + 275)) + B_{\bar{N}}(2N + 277 - B_{\bar{N}}(2N + 274)) \\
&= B_{\bar{N}}(2N + 277 - (N + 330)) + B_{\bar{N}}(2N + 277 - (2N + 241)) + B_{\bar{N}}(2N + 277 - (2N - 31)) \\
&= B_{\bar{N}}(N - 53) + B_{\bar{N}}(36) + B_{\bar{N}}(308) = (N - 53) + 36 + 308 = \mathbf{N} + \mathbf{291} \\
&(N \geq 308)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 278) &= B_{\bar{N}}(2N + 278 - B_{\bar{N}}(2N + 277)) + B_{\bar{N}}(2N + 278 - B_{\bar{N}}(2N + 276)) + B_{\bar{N}}(2N + 278 - B_{\bar{N}}(2N + 275)) \\
&= B_{\bar{N}}(2N + 278 - (N + 291)) + B_{\bar{N}}(2N + 278 - (N + 330)) + B_{\bar{N}}(2N + 278 - (2N + 241)) \\
&= B_{\bar{N}}(N - 13) + B_{\bar{N}}(N - 52) + B_{\bar{N}}(37) = (N - 13) + (N - 52) + 37 = \mathbf{2N} - \mathbf{28} \\
&(N \geq 53)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 279) &= B_{\bar{N}}(2N + 279 - B_{\bar{N}}(2N + 278)) + B_{\bar{N}}(2N + 279 - B_{\bar{N}}(2N + 277)) + B_{\bar{N}}(2N + 279 - B_{\bar{N}}(2N + 276)) \\
&= B_{\bar{N}}(2N + 279 - (2N - 28)) + B_{\bar{N}}(2N + 279 - (N + 291)) + B_{\bar{N}}(2N + 279 - (N + 330)) \\
&= B_{\bar{N}}(307) + B_{\bar{N}}(N - 12) + B_{\bar{N}}(N - 51) = 307 + (N - 12) + (N - 51) = \mathbf{2N} + \mathbf{244} \\
&(N \geq 307)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 280) &= B_{\bar{N}}(2N + 280 - B_{\bar{N}}(2N + 279)) + B_{\bar{N}}(2N + 280 - B_{\bar{N}}(2N + 278)) + B_{\bar{N}}(2N + 280 - B_{\bar{N}}(2N + 277)) \\
&= B_{\bar{N}}(2N + 280 - (2N + 244)) + B_{\bar{N}}(2N + 280 - (2N - 28)) + B_{\bar{N}}(2N + 280 - (N + 291)) \\
&= B_{\bar{N}}(36) + B_{\bar{N}}(308) + B_{\bar{N}}(N - 11) = 36 + 308 + (N - 11) = \mathbf{N} + \mathbf{333} \\
&(N \geq 308)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 281) &= B_{\bar{N}}(2N + 281 - B_{\bar{N}}(2N + 280)) + B_{\bar{N}}(2N + 281 - B_{\bar{N}}(2N + 279)) + B_{\bar{N}}(2N + 281 - B_{\bar{N}}(2N + 278)) \\
&= B_{\bar{N}}(2N + 281 - (N + 333)) + B_{\bar{N}}(2N + 281 - (2N + 244)) + B_{\bar{N}}(2N + 281 - (2N - 28)) \\
&= B_{\bar{N}}(N - 52) + B_{\bar{N}}(37) + B_{\bar{N}}(309) = (N - 52) + 37 + 309 = \mathbf{N} + \mathbf{294} \\
&(N \geq 309)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 282) &= B_{\bar{N}}(2N + 282 - B_{\bar{N}}(2N + 281)) + B_{\bar{N}}(2N + 282 - B_{\bar{N}}(2N + 280)) + B_{\bar{N}}(2N + 282 - B_{\bar{N}}(2N + 279)) \\
&= B_{\bar{N}}(2N + 282 - (N + 294)) + B_{\bar{N}}(2N + 282 - (N + 333)) + B_{\bar{N}}(2N + 282 - (2N + 244)) \\
&= B_{\bar{N}}(N - 12) + B_{\bar{N}}(N - 51) + B_{\bar{N}}(38) = (N - 12) + (N - 51) + 38 = \mathbf{2N} - \mathbf{25} \\
&(N \geq 52)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 283) &= B_{\bar{N}}(2N + 283 - B_{\bar{N}}(2N + 282)) + B_{\bar{N}}(2N + 283 - B_{\bar{N}}(2N + 281)) + B_{\bar{N}}(2N + 283 - B_{\bar{N}}(2N + 280)) \\
&= B_{\bar{N}}(2N + 283 - (2N - 25)) + B_{\bar{N}}(2N + 283 - (N + 294)) + B_{\bar{N}}(2N + 283 - (N + 333)) \\
&= B_{\bar{N}}(308) + B_{\bar{N}}(N - 11) + B_{\bar{N}}(N - 50) = 308 + (N - 11) + (N - 50) = \mathbf{2N} + \mathbf{247} \\
&(N \geq 308)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 284) &= B_{\bar{N}}(2N + 284 - B_{\bar{N}}(2N + 283)) + B_{\bar{N}}(2N + 284 - B_{\bar{N}}(2N + 282)) + B_{\bar{N}}(2N + 284 - B_{\bar{N}}(2N + 281)) \\
&= B_{\bar{N}}(2N + 284 - (2N + 247)) + B_{\bar{N}}(2N + 284 - (2N - 25)) + B_{\bar{N}}(2N + 284 - (N + 294)) \\
&= B_{\bar{N}}(37) + B_{\bar{N}}(309) + B_{\bar{N}}(N - 10) = 37 + 309 + (N - 10) = \mathbf{N} + \mathbf{336} \\
&(N \geq 309)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 285) &= B_{\bar{N}}(2N + 285 - B_{\bar{N}}(2N + 284)) + B_{\bar{N}}(2N + 285 - B_{\bar{N}}(2N + 283)) + B_{\bar{N}}(2N + 285 - B_{\bar{N}}(2N + 282)) \\
&= B_{\bar{N}}(2N + 285 - (N + 336)) + B_{\bar{N}}(2N + 285 - (2N + 247)) + B_{\bar{N}}(2N + 285 - (2N - 25)) \\
&= B_{\bar{N}}(N - 51) + B_{\bar{N}}(38) + B_{\bar{N}}(310) = (N - 51) + 38 + 310 = \mathbf{N} + \mathbf{297} \\
&(N \geq 310)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 286) &= B_{\bar{N}}(2N + 286 - B_{\bar{N}}(2N + 285)) + B_{\bar{N}}(2N + 286 - B_{\bar{N}}(2N + 284)) + B_{\bar{N}}(2N + 286 - B_{\bar{N}}(2N + 283)) \\
&= B_{\bar{N}}(2N + 286 - (N + 297)) + B_{\bar{N}}(2N + 286 - (N + 336)) + B_{\bar{N}}(2N + 286 - (2N + 247)) \\
&= B_{\bar{N}}(N - 11) + B_{\bar{N}}(N - 50) + B_{\bar{N}}(39) = (N - 11) + (N - 50) + 39 = \mathbf{2N} - \mathbf{22} \\
&(N \geq 51)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 287) &= B_{\bar{N}}(2N + 287 - B_{\bar{N}}(2N + 286)) + B_{\bar{N}}(2N + 287 - B_{\bar{N}}(2N + 285)) + B_{\bar{N}}(2N + 287 - B_{\bar{N}}(2N + 284)) \\
&= B_{\bar{N}}(2N + 287 - (2N - 22)) + B_{\bar{N}}(2N + 287 - (N + 297)) + B_{\bar{N}}(2N + 287 - (N + 336)) \\
&= B_{\bar{N}}(309) + B_{\bar{N}}(N - 10) + B_{\bar{N}}(N - 49) = 309 + (N - 10) + (N - 49) = \mathbf{2N} + \mathbf{250} \\
&(N \geq 309)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 288) &= B_{\bar{N}}(2N + 288 - B_{\bar{N}}(2N + 287)) + B_{\bar{N}}(2N + 288 - B_{\bar{N}}(2N + 286)) + B_{\bar{N}}(2N + 288 - B_{\bar{N}}(2N + 285)) \\
&= B_{\bar{N}}(2N + 288 - (2N + 250)) + B_{\bar{N}}(2N + 288 - (2N - 22)) + B_{\bar{N}}(2N + 288 - (N + 297)) \\
&= B_{\bar{N}}(38) + B_{\bar{N}}(310) + B_{\bar{N}}(N - 9) = 38 + 310 + (N - 9) = \mathbf{N} + \mathbf{339} \\
&(N \geq 310)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 289) &= B_{\bar{N}}(2N + 289 - B_{\bar{N}}(2N + 288)) + B_{\bar{N}}(2N + 289 - B_{\bar{N}}(2N + 287)) + B_{\bar{N}}(2N + 289 - B_{\bar{N}}(2N + 286)) \\
&= B_{\bar{N}}(2N + 289 - (N + 339)) + B_{\bar{N}}(2N + 289 - (2N + 250)) + B_{\bar{N}}(2N + 289 - (2N - 22)) \\
&= B_{\bar{N}}(N - 50) + B_{\bar{N}}(39) + B_{\bar{N}}(311) = (N - 50) + 39 + 311 = \mathbf{N} + \mathbf{300} \\
&(N \geq 311)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(\mathbf{2N} + \mathbf{290}) &= B_{\bar{N}}(2N + 290 - B_{\bar{N}}(2N + 289)) + B_{\bar{N}}(2N + 290 - B_{\bar{N}}(2N + 288)) + B_{\bar{N}}(2N + 290 - B_{\bar{N}}(2N + 287)) \\
&= B_{\bar{N}}(2N + 290 - (N + 300)) + B_{\bar{N}}(2N + 290 - (N + 339)) + B_{\bar{N}}(2N + 290 - (2N + 250)) \\
&= B_{\bar{N}}(N - 10) + B_{\bar{N}}(N - 49) + B_{\bar{N}}(40) = (N - 10) + (N - 49) + 40 = \mathbf{2N} - \mathbf{19} \\
&(N \geq 50)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(\mathbf{2N} + \mathbf{291}) &= B_{\bar{N}}(2N + 291 - B_{\bar{N}}(2N + 290)) + B_{\bar{N}}(2N + 291 - B_{\bar{N}}(2N + 289)) + B_{\bar{N}}(2N + 291 - B_{\bar{N}}(2N + 288)) \\
&= B_{\bar{N}}(2N + 291 - (2N - 19)) + B_{\bar{N}}(2N + 291 - (N + 300)) + B_{\bar{N}}(2N + 291 - (N + 339)) \\
&= B_{\bar{N}}(310) + B_{\bar{N}}(N - 9) + B_{\bar{N}}(N - 48) = 310 + (N - 9) + (N - 48) = \mathbf{2N} + \mathbf{253} \\
&(N \geq 310)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(\mathbf{2N} + \mathbf{292}) &= B_{\bar{N}}(2N + 292 - B_{\bar{N}}(2N + 291)) + B_{\bar{N}}(2N + 292 - B_{\bar{N}}(2N + 290)) + B_{\bar{N}}(2N + 292 - B_{\bar{N}}(2N + 289)) \\
&= B_{\bar{N}}(2N + 292 - (2N + 253)) + B_{\bar{N}}(2N + 292 - (2N - 19)) + B_{\bar{N}}(2N + 292 - (N + 300)) \\
&= B_{\bar{N}}(39) + B_{\bar{N}}(311) + B_{\bar{N}}(N - 8) = 39 + 311 + (N - 8) = \mathbf{N} + \mathbf{342} \\
&(N \geq 311)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(\mathbf{2N} + \mathbf{293}) &= B_{\bar{N}}(2N + 293 - B_{\bar{N}}(2N + 292)) + B_{\bar{N}}(2N + 293 - B_{\bar{N}}(2N + 291)) + B_{\bar{N}}(2N + 293 - B_{\bar{N}}(2N + 290)) \\
&= B_{\bar{N}}(2N + 293 - (N + 342)) + B_{\bar{N}}(2N + 293 - (2N + 253)) + B_{\bar{N}}(2N + 293 - (2N - 19)) \\
&= B_{\bar{N}}(N - 49) + B_{\bar{N}}(40) + B_{\bar{N}}(312) = (N - 49) + 40 + 312 = \mathbf{N} + \mathbf{303} \\
&(N \geq 312)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(\mathbf{2N} + \mathbf{294}) &= B_{\bar{N}}(2N + 294 - B_{\bar{N}}(2N + 293)) + B_{\bar{N}}(2N + 294 - B_{\bar{N}}(2N + 292)) + B_{\bar{N}}(2N + 294 - B_{\bar{N}}(2N + 291)) \\
&= B_{\bar{N}}(2N + 294 - (N + 303)) + B_{\bar{N}}(2N + 294 - (N + 342)) + B_{\bar{N}}(2N + 294 - (2N + 253)) \\
&= B_{\bar{N}}(N - 9) + B_{\bar{N}}(N - 48) + B_{\bar{N}}(41) = (N - 9) + (N - 48) + 41 = \mathbf{2N} - \mathbf{16} \\
&(N \geq 49)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(\mathbf{2N} + \mathbf{295}) &= B_{\bar{N}}(2N + 295 - B_{\bar{N}}(2N + 294)) + B_{\bar{N}}(2N + 295 - B_{\bar{N}}(2N + 293)) + B_{\bar{N}}(2N + 295 - B_{\bar{N}}(2N + 292)) \\
&= B_{\bar{N}}(2N + 295 - (2N - 16)) + B_{\bar{N}}(2N + 295 - (N + 303)) + B_{\bar{N}}(2N + 295 - (N + 342)) \\
&= B_{\bar{N}}(311) + B_{\bar{N}}(N - 8) + B_{\bar{N}}(N - 47) = 311 + (N - 8) + (N - 47) = \mathbf{2N} + \mathbf{256} \\
&(N \geq 311)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(\mathbf{2N} + \mathbf{296}) &= B_{\bar{N}}(2N + 296 - B_{\bar{N}}(2N + 295)) + B_{\bar{N}}(2N + 296 - B_{\bar{N}}(2N + 294)) + B_{\bar{N}}(2N + 296 - B_{\bar{N}}(2N + 293)) \\
&= B_{\bar{N}}(2N + 296 - (2N + 256)) + B_{\bar{N}}(2N + 296 - (2N - 16)) + B_{\bar{N}}(2N + 296 - (N + 303)) \\
&= B_{\bar{N}}(40) + B_{\bar{N}}(312) + B_{\bar{N}}(N - 7) = 40 + 312 + (N - 7) = \mathbf{N} + \mathbf{345} \\
&(N \geq 312)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(\mathbf{2N} + \mathbf{297}) &= B_{\bar{N}}(2N + 297 - B_{\bar{N}}(2N + 296)) + B_{\bar{N}}(2N + 297 - B_{\bar{N}}(2N + 295)) + B_{\bar{N}}(2N + 297 - B_{\bar{N}}(2N + 294)) \\
&= B_{\bar{N}}(2N + 297 - (N + 345)) + B_{\bar{N}}(2N + 297 - (2N + 256)) + B_{\bar{N}}(2N + 297 - (2N - 16)) \\
&= B_{\bar{N}}(N - 48) + B_{\bar{N}}(41) + B_{\bar{N}}(313) = (N - 48) + 41 + 313 = \mathbf{N} + \mathbf{306} \\
&(N \geq 313)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(\mathbf{2N} + \mathbf{298}) &= B_{\bar{N}}(2N + 298 - B_{\bar{N}}(2N + 297)) + B_{\bar{N}}(2N + 298 - B_{\bar{N}}(2N + 296)) + B_{\bar{N}}(2N + 298 - B_{\bar{N}}(2N + 295)) \\
&= B_{\bar{N}}(2N + 298 - (N + 306)) + B_{\bar{N}}(2N + 298 - (N + 345)) + B_{\bar{N}}(2N + 298 - (2N + 256)) \\
&= B_{\bar{N}}(N - 8) + B_{\bar{N}}(N - 47) + B_{\bar{N}}(42) = (N - 8) + (N - 47) + 42 = \mathbf{2N} - \mathbf{13} \\
&(N \geq 48)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(\mathbf{2N} + \mathbf{299}) &= B_{\bar{N}}(2N + 299 - B_{\bar{N}}(2N + 298)) + B_{\bar{N}}(2N + 299 - B_{\bar{N}}(2N + 297)) + B_{\bar{N}}(2N + 299 - B_{\bar{N}}(2N + 296)) \\
&= B_{\bar{N}}(2N + 299 - (2N - 13)) + B_{\bar{N}}(2N + 299 - (N + 306)) + B_{\bar{N}}(2N + 299 - (N + 345)) \\
&= B_{\bar{N}}(312) + B_{\bar{N}}(N - 7) + B_{\bar{N}}(N - 46) = 312 + (N - 7) + (N - 46) = \mathbf{2N} + \mathbf{259} \\
&(N \geq 312)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 300) &= B_{\bar{N}}(2N + 300 - B_{\bar{N}}(2N + 299)) + B_{\bar{N}}(2N + 300 - B_{\bar{N}}(2N + 298)) + B_{\bar{N}}(2N + 300 - B_{\bar{N}}(2N + 297)) \\
&= B_{\bar{N}}(2N + 300 - (2N + 259)) + B_{\bar{N}}(2N + 300 - (2N - 13)) + B_{\bar{N}}(2N + 300 - (N + 306)) \\
&= B_{\bar{N}}(41) + B_{\bar{N}}(313) + B_{\bar{N}}(N - 6) = 41 + 313 + (N - 6) = \mathbf{N} + \mathbf{348} \\
&(N \geq 313)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 301) &= B_{\bar{N}}(2N + 301 - B_{\bar{N}}(2N + 300)) + B_{\bar{N}}(2N + 301 - B_{\bar{N}}(2N + 299)) + B_{\bar{N}}(2N + 301 - B_{\bar{N}}(2N + 298)) \\
&= B_{\bar{N}}(2N + 301 - (N + 348)) + B_{\bar{N}}(2N + 301 - (2N + 259)) + B_{\bar{N}}(2N + 301 - (2N - 13)) \\
&= B_{\bar{N}}(N - 47) + B_{\bar{N}}(42) + B_{\bar{N}}(314) = (N - 47) + 42 + 314 = \mathbf{N} + \mathbf{309} \\
&(N \geq 314)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 302) &= B_{\bar{N}}(2N + 302 - B_{\bar{N}}(2N + 301)) + B_{\bar{N}}(2N + 302 - B_{\bar{N}}(2N + 300)) + B_{\bar{N}}(2N + 302 - B_{\bar{N}}(2N + 299)) \\
&= B_{\bar{N}}(2N + 302 - (N + 309)) + B_{\bar{N}}(2N + 302 - (N + 348)) + B_{\bar{N}}(2N + 302 - (2N + 259)) \\
&= B_{\bar{N}}(N - 7) + B_{\bar{N}}(N - 46) + B_{\bar{N}}(43) = (N - 7) + (N - 46) + 43 = \mathbf{2N} - \mathbf{10} \\
&(N \geq 47)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 303) &= B_{\bar{N}}(2N + 303 - B_{\bar{N}}(2N + 302)) + B_{\bar{N}}(2N + 303 - B_{\bar{N}}(2N + 301)) + B_{\bar{N}}(2N + 303 - B_{\bar{N}}(2N + 300)) \\
&= B_{\bar{N}}(2N + 303 - (2N - 10)) + B_{\bar{N}}(2N + 303 - (N + 309)) + B_{\bar{N}}(2N + 303 - (N + 348)) \\
&= B_{\bar{N}}(313) + B_{\bar{N}}(N - 6) + B_{\bar{N}}(N - 45) = 313 + (N - 6) + (N - 45) = \mathbf{2N} + \mathbf{262} \\
&(N \geq 313)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 304) &= B_{\bar{N}}(2N + 304 - B_{\bar{N}}(2N + 303)) + B_{\bar{N}}(2N + 304 - B_{\bar{N}}(2N + 302)) + B_{\bar{N}}(2N + 304 - B_{\bar{N}}(2N + 301)) \\
&= B_{\bar{N}}(2N + 304 - (2N + 262)) + B_{\bar{N}}(2N + 304 - (2N - 10)) + B_{\bar{N}}(2N + 304 - (N + 309)) \\
&= B_{\bar{N}}(42) + B_{\bar{N}}(314) + B_{\bar{N}}(N - 5) = 42 + 314 + (N - 5) = \mathbf{N} + \mathbf{351} \\
&(N \geq 314)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 305) &= B_{\bar{N}}(2N + 305 - B_{\bar{N}}(2N + 304)) + B_{\bar{N}}(2N + 305 - B_{\bar{N}}(2N + 303)) + B_{\bar{N}}(2N + 305 - B_{\bar{N}}(2N + 302)) \\
&= B_{\bar{N}}(2N + 305 - (N + 351)) + B_{\bar{N}}(2N + 305 - (2N + 262)) + B_{\bar{N}}(2N + 305 - (2N - 10)) \\
&= B_{\bar{N}}(N - 46) + B_{\bar{N}}(43) + B_{\bar{N}}(315) = (N - 46) + 43 + 315 = \mathbf{N} + \mathbf{312} \\
&(N \geq 315)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 306) &= B_{\bar{N}}(2N + 306 - B_{\bar{N}}(2N + 305)) + B_{\bar{N}}(2N + 306 - B_{\bar{N}}(2N + 304)) + B_{\bar{N}}(2N + 306 - B_{\bar{N}}(2N + 303)) \\
&= B_{\bar{N}}(2N + 306 - (N + 312)) + B_{\bar{N}}(2N + 306 - (N + 351)) + B_{\bar{N}}(2N + 306 - (2N + 262)) \\
&= B_{\bar{N}}(N - 6) + B_{\bar{N}}(N - 45) + B_{\bar{N}}(44) = (N - 6) + (N - 45) + 44 = \mathbf{2N} - \mathbf{7} \\
&(N \geq 46)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 307) &= B_{\bar{N}}(2N + 307 - B_{\bar{N}}(2N + 306)) + B_{\bar{N}}(2N + 307 - B_{\bar{N}}(2N + 305)) + B_{\bar{N}}(2N + 307 - B_{\bar{N}}(2N + 304)) \\
&= B_{\bar{N}}(2N + 307 - (2N - 7)) + B_{\bar{N}}(2N + 307 - (N + 312)) + B_{\bar{N}}(2N + 307 - (N + 351)) \\
&= B_{\bar{N}}(314) + B_{\bar{N}}(N - 5) + B_{\bar{N}}(N - 44) = 314 + (N - 5) + (N - 44) = \mathbf{2N} + \mathbf{265} \\
&(N \geq 314)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 308) &= B_{\bar{N}}(2N + 308 - B_{\bar{N}}(2N + 307)) + B_{\bar{N}}(2N + 308 - B_{\bar{N}}(2N + 306)) + B_{\bar{N}}(2N + 308 - B_{\bar{N}}(2N + 305)) \\
&= B_{\bar{N}}(2N + 308 - (2N + 265)) + B_{\bar{N}}(2N + 308 - (2N - 7)) + B_{\bar{N}}(2N + 308 - (N + 312)) \\
&= B_{\bar{N}}(43) + B_{\bar{N}}(315) + B_{\bar{N}}(N - 4) = 43 + 315 + (N - 4) = \mathbf{N} + \mathbf{354} \\
&(N \geq 315)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 309) &= B_{\bar{N}}(2N + 309 - B_{\bar{N}}(2N + 308)) + B_{\bar{N}}(2N + 309 - B_{\bar{N}}(2N + 307)) + B_{\bar{N}}(2N + 309 - B_{\bar{N}}(2N + 306)) \\
&= B_{\bar{N}}(2N + 309 - (N + 354)) + B_{\bar{N}}(2N + 309 - (2N + 265)) + B_{\bar{N}}(2N + 309 - (2N - 7)) \\
&= B_{\bar{N}}(N - 45) + B_{\bar{N}}(44) + B_{\bar{N}}(316) = (N - 45) + 44 + 316 = \mathbf{N} + \mathbf{315} \\
&(N \geq 316)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 310) &= B_{\bar{N}}(2N + 310 - B_{\bar{N}}(2N + 309)) + B_{\bar{N}}(2N + 310 - B_{\bar{N}}(2N + 308)) + B_{\bar{N}}(2N + 310 - B_{\bar{N}}(2N + 307)) \\
&= B_{\bar{N}}(2N + 310 - (N + 315)) + B_{\bar{N}}(2N + 310 - (N + 354)) + B_{\bar{N}}(2N + 310 - (2N + 265)) \\
&= B_{\bar{N}}(N - 5) + B_{\bar{N}}(N - 44) + B_{\bar{N}}(45) = (N - 5) + (N - 44) + 45 = \mathbf{2N - 4} \\
&(N \geq 45)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 311) &= B_{\bar{N}}(2N + 311 - B_{\bar{N}}(2N + 310)) + B_{\bar{N}}(2N + 311 - B_{\bar{N}}(2N + 309)) + B_{\bar{N}}(2N + 311 - B_{\bar{N}}(2N + 308)) \\
&= B_{\bar{N}}(2N + 311 - (2N - 4)) + B_{\bar{N}}(2N + 311 - (N + 315)) + B_{\bar{N}}(2N + 311 - (N + 354)) \\
&= B_{\bar{N}}(315) + B_{\bar{N}}(N - 4) + B_{\bar{N}}(N - 43) = 315 + (N - 4) + (N - 43) = \mathbf{2N + 268} \\
&(N \geq 315)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 312) &= B_{\bar{N}}(2N + 312 - B_{\bar{N}}(2N + 311)) + B_{\bar{N}}(2N + 312 - B_{\bar{N}}(2N + 310)) + B_{\bar{N}}(2N + 312 - B_{\bar{N}}(2N + 309)) \\
&= B_{\bar{N}}(2N + 312 - (2N + 268)) + B_{\bar{N}}(2N + 312 - (2N - 4)) + B_{\bar{N}}(2N + 312 - (N + 315)) \\
&= B_{\bar{N}}(44) + B_{\bar{N}}(316) + B_{\bar{N}}(N - 3) = 44 + 316 + (N - 3) = \mathbf{N + 357} \\
&(N \geq 316)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 313) &= B_{\bar{N}}(2N + 313 - B_{\bar{N}}(2N + 312)) + B_{\bar{N}}(2N + 313 - B_{\bar{N}}(2N + 311)) + B_{\bar{N}}(2N + 313 - B_{\bar{N}}(2N + 310)) \\
&= B_{\bar{N}}(2N + 313 - (N + 357)) + B_{\bar{N}}(2N + 313 - (2N + 268)) + B_{\bar{N}}(2N + 313 - (2N - 4)) \\
&= B_{\bar{N}}(N - 44) + B_{\bar{N}}(45) + B_{\bar{N}}(317) = (N - 44) + 45 + 317 = \mathbf{N + 318} \\
&(N \geq 317)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 314) &= B_{\bar{N}}(2N + 314 - B_{\bar{N}}(2N + 313)) + B_{\bar{N}}(2N + 314 - B_{\bar{N}}(2N + 312)) + B_{\bar{N}}(2N + 314 - B_{\bar{N}}(2N + 311)) \\
&= B_{\bar{N}}(2N + 314 - (N + 318)) + B_{\bar{N}}(2N + 314 - (N + 357)) + B_{\bar{N}}(2N + 314 - (2N + 268)) \\
&= B_{\bar{N}}(N - 4) + B_{\bar{N}}(N - 43) + B_{\bar{N}}(46) = (N - 4) + (N - 43) + 46 = \mathbf{2N - 1} \\
&(N \geq 46)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 315) &= B_{\bar{N}}(2N + 315 - B_{\bar{N}}(2N + 314)) + B_{\bar{N}}(2N + 315 - B_{\bar{N}}(2N + 313)) + B_{\bar{N}}(2N + 315 - B_{\bar{N}}(2N + 312)) \\
&= B_{\bar{N}}(2N + 315 - (2N - 1)) + B_{\bar{N}}(2N + 315 - (N + 318)) + B_{\bar{N}}(2N + 315 - (N + 357)) \\
&= B_{\bar{N}}(316) + B_{\bar{N}}(N - 3) + B_{\bar{N}}(N - 42) = 316 + (N - 3) + (N - 42) = \mathbf{2N} + \mathbf{271} \\
&(N \geq 316)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 316) &= B_{\bar{N}}(2N + 316 - B_{\bar{N}}(2N + 315)) + B_{\bar{N}}(2N + 316 - B_{\bar{N}}(2N + 314)) + B_{\bar{N}}(2N + 316 - B_{\bar{N}}(2N + 313)) \\
&= B_{\bar{N}}(2N + 316 - (2N + 271)) + B_{\bar{N}}(2N + 316 - (2N - 1)) + B_{\bar{N}}(2N + 316 - (N + 318)) \\
&= B_{\bar{N}}(45) + B_{\bar{N}}(317) + B_{\bar{N}}(N - 2) = 45 + 317 + (N - 2) = \mathbf{N} + \mathbf{360} \\
&(N \geq 317)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 317) &= B_{\bar{N}}(2N + 317 - B_{\bar{N}}(2N + 316)) + B_{\bar{N}}(2N + 317 - B_{\bar{N}}(2N + 315)) + B_{\bar{N}}(2N + 317 - B_{\bar{N}}(2N + 314)) \\
&= B_{\bar{N}}(2N + 317 - (N + 360)) + B_{\bar{N}}(2N + 317 - (2N + 271)) + B_{\bar{N}}(2N + 317 - (2N - 1)) \\
&= B_{\bar{N}}(N - 43) + B_{\bar{N}}(46) + B_{\bar{N}}(318) = (N - 43) + 46 + 318 = \mathbf{N} + \mathbf{321} \\
&(N \geq 318)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 318) &= B_{\bar{N}}(2N + 318 - B_{\bar{N}}(2N + 317)) + B_{\bar{N}}(2N + 318 - B_{\bar{N}}(2N + 316)) + B_{\bar{N}}(2N + 318 - B_{\bar{N}}(2N + 315)) \\
&= B_{\bar{N}}(2N + 318 - (N + 321)) + B_{\bar{N}}(2N + 318 - (N + 360)) + B_{\bar{N}}(2N + 318 - (2N + 271)) \\
&= B_{\bar{N}}(N - 3) + B_{\bar{N}}(N - 42) + B_{\bar{N}}(47) = (N - 3) + (N - 42) + 47 = \mathbf{2N} + \mathbf{2} \\
&(N \geq 47)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 319) &= B_{\bar{N}}(2N + 319 - B_{\bar{N}}(2N + 318)) + B_{\bar{N}}(2N + 319 - B_{\bar{N}}(2N + 317)) + B_{\bar{N}}(2N + 319 - B_{\bar{N}}(2N + 316)) \\
&= B_{\bar{N}}(2N + 319 - (2N + 2)) + B_{\bar{N}}(2N + 319 - (N + 321)) + B_{\bar{N}}(2N + 319 - (N + 360)) \\
&= B_{\bar{N}}(317) + B_{\bar{N}}(N - 2) + B_{\bar{N}}(N - 41) = 317 + (N - 2) + (N - 41) = \mathbf{2N} + \mathbf{274} \\
&(N \geq 317)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 320) &= B_{\bar{N}}(2N + 320 - B_{\bar{N}}(2N + 319)) + B_{\bar{N}}(2N + 320 - B_{\bar{N}}(2N + 318)) + B_{\bar{N}}(2N + 320 - B_{\bar{N}}(2N + 317)) \\
&= B_{\bar{N}}(2N + 320 - (2N + 274)) + B_{\bar{N}}(2N + 320 - (2N + 2)) + B_{\bar{N}}(2N + 320 - (N + 321)) \\
&= B_{\bar{N}}(46) + B_{\bar{N}}(318) + B_{\bar{N}}(N - 1) = 46 + 318 + (N - 1) = \mathbf{N} + \mathbf{363} \\
&(N \geq 318)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 321) &= B_{\bar{N}}(2N + 321 - B_{\bar{N}}(2N + 320)) + B_{\bar{N}}(2N + 321 - B_{\bar{N}}(2N + 319)) + B_{\bar{N}}(2N + 321 - B_{\bar{N}}(2N + 318)) \\
&= B_{\bar{N}}(2N + 321 - (N + 363)) + B_{\bar{N}}(2N + 321 - (2N + 274)) + B_{\bar{N}}(2N + 321 - (2N + 2)) \\
&= B_{\bar{N}}(N - 42) + B_{\bar{N}}(47) + B_{\bar{N}}(319) = (N - 42) + 47 + 319 = \mathbf{N} + \mathbf{324} \\
&(N \geq 319)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 322) &= B_{\bar{N}}(2N + 322 - B_{\bar{N}}(2N + 321)) + B_{\bar{N}}(2N + 322 - B_{\bar{N}}(2N + 320)) + B_{\bar{N}}(2N + 322 - B_{\bar{N}}(2N + 319)) \\
&= B_{\bar{N}}(2N + 322 - (N + 324)) + B_{\bar{N}}(2N + 322 - (N + 363)) + B_{\bar{N}}(2N + 322 - (2N + 274)) \\
&= B_{\bar{N}}(N - 2) + B_{\bar{N}}(N - 41) + B_{\bar{N}}(48) = (N - 2) + (N - 41) + 48 = \mathbf{2N} + \mathbf{5} \\
&(N \geq 48)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 323) &= B_{\bar{N}}(2N + 323 - B_{\bar{N}}(2N + 322)) + B_{\bar{N}}(2N + 323 - B_{\bar{N}}(2N + 321)) + B_{\bar{N}}(2N + 323 - B_{\bar{N}}(2N + 320)) \\
&= B_{\bar{N}}(2N + 323 - (2N + 5)) + B_{\bar{N}}(2N + 323 - (N + 324)) + B_{\bar{N}}(2N + 323 - (N + 363)) \\
&= B_{\bar{N}}(318) + B_{\bar{N}}(N - 1) + B_{\bar{N}}(N - 40) = 318 + (N - 1) + (N - 40) = \mathbf{2N} + \mathbf{277} \\
&(N \geq 318)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 324) &= B_{\bar{N}}(2N + 324 - B_{\bar{N}}(2N + 323)) + B_{\bar{N}}(2N + 324 - B_{\bar{N}}(2N + 322)) + B_{\bar{N}}(2N + 324 - B_{\bar{N}}(2N + 321)) \\
&= B_{\bar{N}}(2N + 324 - (2N + 277)) + B_{\bar{N}}(2N + 324 - (2N + 5)) + B_{\bar{N}}(2N + 324 - (N + 324)) \\
&= B_{\bar{N}}(47) + B_{\bar{N}}(319) + B_{\bar{N}}(N) = 47 + 319 + N = \mathbf{N} + \mathbf{366} \\
&(N \geq 319)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 325) &= B_{\bar{N}}(2N + 325 - B_{\bar{N}}(2N + 324)) + B_{\bar{N}}(2N + 325 - B_{\bar{N}}(2N + 323)) + B_{\bar{N}}(2N + 325 - B_{\bar{N}}(2N + 322)) \\
&= B_{\bar{N}}(2N + 325 - (N + 366)) + B_{\bar{N}}(2N + 325 - (2N + 277)) + B_{\bar{N}}(2N + 325 - (2N + 5)) \\
&= B_{\bar{N}}(N - 41) + B_{\bar{N}}(48) + B_{\bar{N}}(320) = (N - 41) + 48 + 320 = \mathbf{N} + \mathbf{327} \\
&(N \geq 320)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 326) &= B_{\bar{N}}(2N + 326 - B_{\bar{N}}(2N + 325)) + B_{\bar{N}}(2N + 326 - B_{\bar{N}}(2N + 324)) + B_{\bar{N}}(2N + 326 - B_{\bar{N}}(2N + 323)) \\
&= B_{\bar{N}}(2N + 326 - (N + 327)) + B_{\bar{N}}(2N + 326 - (N + 366)) + B_{\bar{N}}(2N + 326 - (2N + 277)) \\
&= B_{\bar{N}}(N - 1) + B_{\bar{N}}(N - 40) + B_{\bar{N}}(49) = (N - 1) + (N - 40) + 49 = \mathbf{2N} + \mathbf{8} \\
&(N \geq 49)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 327) &= B_{\bar{N}}(2N + 327 - B_{\bar{N}}(2N + 326)) + B_{\bar{N}}(2N + 327 - B_{\bar{N}}(2N + 325)) + B_{\bar{N}}(2N + 327 - B_{\bar{N}}(2N + 324)) \\
&= B_{\bar{N}}(2N + 327 - (2N + 8)) + B_{\bar{N}}(2N + 327 - (N + 327)) + B_{\bar{N}}(2N + 327 - (N + 366)) \\
&= B_{\bar{N}}(319) + B_{\bar{N}}(N) + B_{\bar{N}}(N - 39) = 319 + N + (N - 39) = \mathbf{2N} + \mathbf{280} \\
&(N \geq 319)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 328) &= B_{\bar{N}}(2N + 328 - B_{\bar{N}}(2N + 327)) + B_{\bar{N}}(2N + 328 - B_{\bar{N}}(2N + 326)) + B_{\bar{N}}(2N + 328 - B_{\bar{N}}(2N + 325)) \\
&= B_{\bar{N}}(2N + 328 - (2N + 280)) + B_{\bar{N}}(2N + 328 - (2N + 8)) + B_{\bar{N}}(2N + 328 - (N + 327)) \\
&= B_{\bar{N}}(48) + B_{\bar{N}}(320) + B_{\bar{N}}(N + 1) = 48 + 320 + 6 = \mathbf{374} \\
&(N \geq 320)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 329) &= B_{\bar{N}}(2N + 329 - B_{\bar{N}}(2N + 328)) + B_{\bar{N}}(2N + 329 - B_{\bar{N}}(2N + 327)) + B_{\bar{N}}(2N + 329 - B_{\bar{N}}(2N + 326)) \\
&= B_{\bar{N}}(2N + 329 - 374) + B_{\bar{N}}(2N + 329 - (2N + 280)) + B_{\bar{N}}(2N + 329 - (2N + 8)) \\
&= B_{\bar{N}}(2N - 45) + B_{\bar{N}}(49) + B_{\bar{N}}(321) = (N - 2) + 49 + 321 = \mathbf{N} + \mathbf{368} \\
&(N \geq 321)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 330) &= B_{\bar{N}}(2N + 330 - B_{\bar{N}}(2N + 329)) + B_{\bar{N}}(2N + 330 - B_{\bar{N}}(2N + 328)) + B_{\bar{N}}(2N + 330 - B_{\bar{N}}(2N + 327)) \\
&= B_{\bar{N}}(2N + 330 - (N + 368)) + B_{\bar{N}}(2N + 330 - 374) + B_{\bar{N}}(2N + 330 - (2N + 280)) \\
&= B_{\bar{N}}(N - 38) + B_{\bar{N}}(2N - 44) + B_{\bar{N}}(50) = (N - 38) + (N - 42) + 50 = \mathbf{2N} - \mathbf{30} \\
&(N \geq 111)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 331) &= B_{\bar{N}}(2N + 331 - B_{\bar{N}}(2N + 330)) + B_{\bar{N}}(2N + 331 - B_{\bar{N}}(2N + 329)) + B_{\bar{N}}(2N + 331 - B_{\bar{N}}(2N + 328)) \\
&= B_{\bar{N}}(2N + 331 - (2N - 30)) + B_{\bar{N}}(2N + 331 - (N + 368)) + B_{\bar{N}}(2N + 331 - 374) \\
&= B_{\bar{N}}(361) + B_{\bar{N}}(N - 37) + B_{\bar{N}}(2N - 43) = 361 + (N - 37) + (2N - 42) = \mathbf{3N} + \mathbf{282} \\
&(N \geq 361)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 332) &= B_{\bar{N}}(2N + 332 - B_{\bar{N}}(2N + 331)) + B_{\bar{N}}(2N + 332 - B_{\bar{N}}(2N + 330)) + B_{\bar{N}}(2N + 332 - B_{\bar{N}}(2N + 329)) \\
&= B_{\bar{N}}(2N + 332 - (3N + 282)) + B_{\bar{N}}(2N + 332 - (2N - 30)) + B_{\bar{N}}(2N + 332 - (N + 368)) \\
&= B_{\bar{N}}(-N + 50) + B_{\bar{N}}(362) + B_{\bar{N}}(N - 36) = 0 + 362 + (N - 36) = \mathbf{N} + \mathbf{326} \\
&(N \geq 362)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 333) &= B_{\bar{N}}(2N + 333 - B_{\bar{N}}(2N + 332)) + B_{\bar{N}}(2N + 333 - B_{\bar{N}}(2N + 331)) + B_{\bar{N}}(2N + 333 - B_{\bar{N}}(2N + 330)) \\
&= B_{\bar{N}}(2N + 333 - (N + 326)) + B_{\bar{N}}(2N + 333 - (3N + 282)) + B_{\bar{N}}(2N + 333 - (2N - 30)) \\
&= B_{\bar{N}}(N + 7) + B_{\bar{N}}(-N + 51) + B_{\bar{N}}(363) = (N + 5) + 0 + 363 = \mathbf{N} + \mathbf{368} \\
&(N \geq 363)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 334) &= B_{\bar{N}}(2N + 334 - B_{\bar{N}}(2N + 333)) + B_{\bar{N}}(2N + 334 - B_{\bar{N}}(2N + 332)) + B_{\bar{N}}(2N + 334 - B_{\bar{N}}(2N + 331)) \\
&= B_{\bar{N}}(2N + 334 - (N + 368)) + B_{\bar{N}}(2N + 334 - (N + 326)) + B_{\bar{N}}(2N + 334 - (3N + 282)) \\
&= B_{\bar{N}}(N - 34) + B_{\bar{N}}(N + 8) + B_{\bar{N}}(-N + 52) = (N - 34) + (N + 6) + 0 = \mathbf{2N} - \mathbf{28} \\
&(N \geq 52)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 335) &= B_{\bar{N}}(2N + 335 - B_{\bar{N}}(2N + 334)) + B_{\bar{N}}(2N + 335 - B_{\bar{N}}(2N + 333)) + B_{\bar{N}}(2N + 335 - B_{\bar{N}}(2N + 332)) \\
&= B_{\bar{N}}(2N + 335 - (2N - 28)) + B_{\bar{N}}(2N + 335 - (N + 368)) + B_{\bar{N}}(2N + 335 - (N + 326)) \\
&= B_{\bar{N}}(363) + B_{\bar{N}}(N - 33) + B_{\bar{N}}(N + 9) = 363 + (N - 33) + 12 = \mathbf{N} + \mathbf{342} \\
&(N \geq 363)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 336) &= B_{\bar{N}}(2N + 336 - B_{\bar{N}}(2N + 335)) + B_{\bar{N}}(2N + 336 - B_{\bar{N}}(2N + 334)) + B_{\bar{N}}(2N + 336 - B_{\bar{N}}(2N + 333)) \\
&= B_{\bar{N}}(2N + 336 - (N + 342)) + B_{\bar{N}}(2N + 336 - (2N - 28)) + B_{\bar{N}}(2N + 336 - (N + 368)) \\
&= B_{\bar{N}}(N - 6) + B_{\bar{N}}(364) + B_{\bar{N}}(N - 32) = (N - 6) + 364 + (N - 32) = \mathbf{2N} + \mathbf{326} \\
&(N \geq 364)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 337) &= B_{\bar{N}}(2N + 337 - B_{\bar{N}}(2N + 336)) + B_{\bar{N}}(2N + 337 - B_{\bar{N}}(2N + 335)) + B_{\bar{N}}(2N + 337 - B_{\bar{N}}(2N + 334)) \\
&= B_{\bar{N}}(2N + 337 - (2N + 326)) + B_{\bar{N}}(2N + 337 - (N + 342)) + B_{\bar{N}}(2N + 337 - (2N - 28)) \\
&= B_{\bar{N}}(11) + B_{\bar{N}}(N - 5) + B_{\bar{N}}(365) = 11 + (N - 5) + 365 = \mathbf{N} + \mathbf{371} \\
&(N \geq 365)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 338) &= B_{\bar{N}}(2N + 338 - B_{\bar{N}}(2N + 337)) + B_{\bar{N}}(2N + 338 - B_{\bar{N}}(2N + 336)) + B_{\bar{N}}(2N + 338 - B_{\bar{N}}(2N + 335)) \\
&= B_{\bar{N}}(2N + 338 - (N + 371)) + B_{\bar{N}}(2N + 338 - (2N + 326)) + B_{\bar{N}}(2N + 338 - (N + 342)) \\
&= B_{\bar{N}}(N - 33) + B_{\bar{N}}(12) + B_{\bar{N}}(N - 4) = (N - 33) + 12 + (N - 4) = \mathbf{2N} - \mathbf{25} \\
&(N \geq 34)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 339) &= B_{\bar{N}}(2N + 339 - B_{\bar{N}}(2N + 338)) + B_{\bar{N}}(2N + 339 - B_{\bar{N}}(2N + 337)) + B_{\bar{N}}(2N + 339 - B_{\bar{N}}(2N + 336)) \\
&= B_{\bar{N}}(2N + 339 - (2N - 25)) + B_{\bar{N}}(2N + 339 - (N + 371)) + B_{\bar{N}}(2N + 339 - (2N + 326)) \\
&= B_{\bar{N}}(364) + B_{\bar{N}}(N - 32) + B_{\bar{N}}(13) = 364 + (N - 32) + 13 = \mathbf{N} + \mathbf{345} \\
&(N \geq 364)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 340) &= B_{\bar{N}}(2N + 340 - B_{\bar{N}}(2N + 339)) + B_{\bar{N}}(2N + 340 - B_{\bar{N}}(2N + 338)) + B_{\bar{N}}(2N + 340 - B_{\bar{N}}(2N + 337)) \\
&= B_{\bar{N}}(2N + 340 - (N + 345)) + B_{\bar{N}}(2N + 340 - (2N - 25)) + B_{\bar{N}}(2N + 340 - (N + 371)) \\
&= B_{\bar{N}}(N - 5) + B_{\bar{N}}(365) + B_{\bar{N}}(N - 31) = (N - 5) + 365 + (N - 31) = \mathbf{2N} + \mathbf{329} \\
&(N \geq 365)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 341) &= B_{\bar{N}}(2N + 341 - B_{\bar{N}}(2N + 340)) + B_{\bar{N}}(2N + 341 - B_{\bar{N}}(2N + 339)) + B_{\bar{N}}(2N + 341 - B_{\bar{N}}(2N + 338)) \\
&= B_{\bar{N}}(2N + 341 - (2N + 329)) + B_{\bar{N}}(2N + 341 - (N + 345)) + B_{\bar{N}}(2N + 341 - (2N - 25)) \\
&= B_{\bar{N}}(12) + B_{\bar{N}}(N - 4) + B_{\bar{N}}(366) = 12 + (N - 4) + 366 = \mathbf{N} + \mathbf{374} \\
&(N \geq 366)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 342) &= B_{\bar{N}}(2N + 342 - B_{\bar{N}}(2N + 341)) + B_{\bar{N}}(2N + 342 - B_{\bar{N}}(2N + 340)) + B_{\bar{N}}(2N + 342 - B_{\bar{N}}(2N + 339)) \\
&= B_{\bar{N}}(2N + 342 - (N + 374)) + B_{\bar{N}}(2N + 342 - (2N + 329)) + B_{\bar{N}}(2N + 342 - (N + 345)) \\
&= B_{\bar{N}}(N - 32) + B_{\bar{N}}(13) + B_{\bar{N}}(N - 3) = (N - 32) + 13 + (N - 3) = \mathbf{2N} - \mathbf{22} \\
&(N \geq 33)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 343) &= B_{\bar{N}}(2N + 343 - B_{\bar{N}}(2N + 342)) + B_{\bar{N}}(2N + 343 - B_{\bar{N}}(2N + 341)) + B_{\bar{N}}(2N + 343 - B_{\bar{N}}(2N + 340)) \\
&= B_{\bar{N}}(2N + 343 - (2N - 22)) + B_{\bar{N}}(2N + 343 - (N + 374)) + B_{\bar{N}}(2N + 343 - (2N + 329)) \\
&= B_{\bar{N}}(365) + B_{\bar{N}}(N - 31) + B_{\bar{N}}(14) = 365 + (N - 31) + 14 = \mathbf{N} + \mathbf{348} \\
&(N \geq 365)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 344) &= B_{\bar{N}}(2N + 344 - B_{\bar{N}}(2N + 343)) + B_{\bar{N}}(2N + 344 - B_{\bar{N}}(2N + 342)) + B_{\bar{N}}(2N + 344 - B_{\bar{N}}(2N + 341)) \\
&= B_{\bar{N}}(2N + 344 - (N + 348)) + B_{\bar{N}}(2N + 344 - (2N - 22)) + B_{\bar{N}}(2N + 344 - (N + 374)) \\
&= B_{\bar{N}}(N - 4) + B_{\bar{N}}(366) + B_{\bar{N}}(N - 30) = (N - 4) + 366 + (N - 30) = \mathbf{2N} + \mathbf{332} \\
&(N \geq 366)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 345) &= B_{\bar{N}}(2N + 345 - B_{\bar{N}}(2N + 344)) + B_{\bar{N}}(2N + 345 - B_{\bar{N}}(2N + 343)) + B_{\bar{N}}(2N + 345 - B_{\bar{N}}(2N + 342)) \\
&= B_{\bar{N}}(2N + 345 - (2N + 332)) + B_{\bar{N}}(2N + 345 - (N + 348)) + B_{\bar{N}}(2N + 345 - (2N - 22)) \\
&= B_{\bar{N}}(13) + B_{\bar{N}}(N - 3) + B_{\bar{N}}(367) = 13 + (N - 3) + 367 = \mathbf{N} + \mathbf{377} \\
&(N \geq 367)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 346) &= B_{\bar{N}}(2N + 346 - B_{\bar{N}}(2N + 345)) + B_{\bar{N}}(2N + 346 - B_{\bar{N}}(2N + 344)) + B_{\bar{N}}(2N + 346 - B_{\bar{N}}(2N + 343)) \\
&= B_{\bar{N}}(2N + 346 - (N + 377)) + B_{\bar{N}}(2N + 346 - (2N + 332)) + B_{\bar{N}}(2N + 346 - (N + 348)) \\
&= B_{\bar{N}}(N - 31) + B_{\bar{N}}(14) + B_{\bar{N}}(N - 2) = (N - 31) + 14 + (N - 2) = \mathbf{2N} - \mathbf{19} \\
&(N \geq 32)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 347) &= B_{\bar{N}}(2N + 347 - B_{\bar{N}}(2N + 346)) + B_{\bar{N}}(2N + 347 - B_{\bar{N}}(2N + 345)) + B_{\bar{N}}(2N + 347 - B_{\bar{N}}(2N + 344)) \\
&= B_{\bar{N}}(2N + 347 - (2N - 19)) + B_{\bar{N}}(2N + 347 - (N + 377)) + B_{\bar{N}}(2N + 347 - (2N + 332)) \\
&= B_{\bar{N}}(366) + B_{\bar{N}}(N - 30) + B_{\bar{N}}(15) = 366 + (N - 30) + 15 = \mathbf{N} + \mathbf{351} \\
&(N \geq 366)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 348) &= B_{\bar{N}}(2N + 348 - B_{\bar{N}}(2N + 347)) + B_{\bar{N}}(2N + 348 - B_{\bar{N}}(2N + 346)) + B_{\bar{N}}(2N + 348 - B_{\bar{N}}(2N + 345)) \\
&= B_{\bar{N}}(2N + 348 - (N + 351)) + B_{\bar{N}}(2N + 348 - (2N - 19)) + B_{\bar{N}}(2N + 348 - (N + 377)) \\
&= B_{\bar{N}}(N - 3) + B_{\bar{N}}(367) + B_{\bar{N}}(N - 29) = (N - 3) + 367 + (N - 29) = \mathbf{2N} + \mathbf{335} \\
&(N \geq 367)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 349) &= B_{\bar{N}}(2N + 349 - B_{\bar{N}}(2N + 348)) + B_{\bar{N}}(2N + 349 - B_{\bar{N}}(2N + 347)) + B_{\bar{N}}(2N + 349 - B_{\bar{N}}(2N + 346)) \\
&= B_{\bar{N}}(2N + 349 - (2N + 335)) + B_{\bar{N}}(2N + 349 - (N + 351)) + B_{\bar{N}}(2N + 349 - (2N - 19)) \\
&= B_{\bar{N}}(14) + B_{\bar{N}}(N - 2) + B_{\bar{N}}(368) = 14 + (N - 2) + 368 = \mathbf{N} + \mathbf{380} \\
&(N \geq 368)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 350) &= B_{\bar{N}}(2N + 350 - B_{\bar{N}}(2N + 349)) + B_{\bar{N}}(2N + 350 - B_{\bar{N}}(2N + 348)) + B_{\bar{N}}(2N + 350 - B_{\bar{N}}(2N + 347)) \\
&= B_{\bar{N}}(2N + 350 - (N + 380)) + B_{\bar{N}}(2N + 350 - (2N + 335)) + B_{\bar{N}}(2N + 350 - (N + 351)) \\
&= B_{\bar{N}}(N - 30) + B_{\bar{N}}(15) + B_{\bar{N}}(N - 1) = (N - 30) + 15 + (N - 1) = \mathbf{2N - 16} \\
&(N \geq 31)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 351) &= B_{\bar{N}}(2N + 351 - B_{\bar{N}}(2N + 350)) + B_{\bar{N}}(2N + 351 - B_{\bar{N}}(2N + 349)) + B_{\bar{N}}(2N + 351 - B_{\bar{N}}(2N + 348)) \\
&= B_{\bar{N}}(2N + 351 - (2N - 16)) + B_{\bar{N}}(2N + 351 - (N + 380)) + B_{\bar{N}}(2N + 351 - (2N + 335)) \\
&= B_{\bar{N}}(367) + B_{\bar{N}}(N - 29) + B_{\bar{N}}(16) = 367 + (N - 29) + 16 = \mathbf{N + 354} \\
&(N \geq 367)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 352) &= B_{\bar{N}}(2N + 352 - B_{\bar{N}}(2N + 351)) + B_{\bar{N}}(2N + 352 - B_{\bar{N}}(2N + 350)) + B_{\bar{N}}(2N + 352 - B_{\bar{N}}(2N + 349)) \\
&= B_{\bar{N}}(2N + 352 - (N + 354)) + B_{\bar{N}}(2N + 352 - (2N - 16)) + B_{\bar{N}}(2N + 352 - (N + 380)) \\
&= B_{\bar{N}}(N - 2) + B_{\bar{N}}(368) + B_{\bar{N}}(N - 28) = (N - 2) + 368 + (N - 28) = \mathbf{2N + 338} \\
&(N \geq 368)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 353) &= B_{\bar{N}}(2N + 353 - B_{\bar{N}}(2N + 352)) + B_{\bar{N}}(2N + 353 - B_{\bar{N}}(2N + 351)) + B_{\bar{N}}(2N + 353 - B_{\bar{N}}(2N + 350)) \\
&= B_{\bar{N}}(2N + 353 - (2N + 338)) + B_{\bar{N}}(2N + 353 - (N + 354)) + B_{\bar{N}}(2N + 353 - (2N - 16)) \\
&= B_{\bar{N}}(15) + B_{\bar{N}}(N - 1) + B_{\bar{N}}(369) = 15 + (N - 1) + 369 = \mathbf{N + 383} \\
&(N \geq 369)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 354) &= B_{\bar{N}}(2N + 354 - B_{\bar{N}}(2N + 353)) + B_{\bar{N}}(2N + 354 - B_{\bar{N}}(2N + 352)) + B_{\bar{N}}(2N + 354 - B_{\bar{N}}(2N + 351)) \\
&= B_{\bar{N}}(2N + 354 - (N + 383)) + B_{\bar{N}}(2N + 354 - (2N + 338)) + B_{\bar{N}}(2N + 354 - (N + 354)) \\
&= B_{\bar{N}}(N - 29) + B_{\bar{N}}(16) + B_{\bar{N}}(N) = (N - 29) + 16 + N = \mathbf{2N - 13} \\
&(N \geq 30)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 355) &= B_{\bar{N}}(2N + 355 - B_{\bar{N}}(2N + 354)) + B_{\bar{N}}(2N + 355 - B_{\bar{N}}(2N + 353)) + B_{\bar{N}}(2N + 355 - B_{\bar{N}}(2N + 352)) \\
&= B_{\bar{N}}(2N + 355 - (2N - 13)) + B_{\bar{N}}(2N + 355 - (N + 383)) + B_{\bar{N}}(2N + 355 - (2N + 338)) \\
&= B_{\bar{N}}(368) + B_{\bar{N}}(N - 28) + B_{\bar{N}}(17) = 368 + (N - 28) + 17 = \mathbf{N} + 357 \\
&(N \geq 368)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 356) &= B_{\bar{N}}(2N + 356 - B_{\bar{N}}(2N + 355)) + B_{\bar{N}}(2N + 356 - B_{\bar{N}}(2N + 354)) + B_{\bar{N}}(2N + 356 - B_{\bar{N}}(2N + 353)) \\
&= B_{\bar{N}}(2N + 356 - (N + 357)) + B_{\bar{N}}(2N + 356 - (2N - 13)) + B_{\bar{N}}(2N + 356 - (N + 383)) \\
&= B_{\bar{N}}(N - 1) + B_{\bar{N}}(369) + B_{\bar{N}}(N - 27) = (N - 1) + 369 + (N - 27) = 2\mathbf{N} + 341 \\
&(N \geq 369)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 357) &= B_{\bar{N}}(2N + 357 - B_{\bar{N}}(2N + 356)) + B_{\bar{N}}(2N + 357 - B_{\bar{N}}(2N + 355)) + B_{\bar{N}}(2N + 357 - B_{\bar{N}}(2N + 354)) \\
&= B_{\bar{N}}(2N + 357 - (2N + 341)) + B_{\bar{N}}(2N + 357 - (N + 357)) + B_{\bar{N}}(2N + 357 - (2N - 13)) \\
&= B_{\bar{N}}(16) + B_{\bar{N}}(N) + B_{\bar{N}}(370) = 16 + N + 370 = \mathbf{N} + 386 \\
&(N \geq 370)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 358) &= B_{\bar{N}}(2N + 358 - B_{\bar{N}}(2N + 357)) + B_{\bar{N}}(2N + 358 - B_{\bar{N}}(2N + 356)) + B_{\bar{N}}(2N + 358 - B_{\bar{N}}(2N + 355)) \\
&= B_{\bar{N}}(2N + 358 - (N + 386)) + B_{\bar{N}}(2N + 358 - (2N + 341)) + B_{\bar{N}}(2N + 358 - (N + 357)) \\
&= B_{\bar{N}}(N - 28) + B_{\bar{N}}(17) + B_{\bar{N}}(N + 1) = (N - 28) + 17 + 6 = \mathbf{N} - 5 \\
&(N \geq 29)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 359) &= B_{\bar{N}}(2N + 359 - B_{\bar{N}}(2N + 358)) + B_{\bar{N}}(2N + 359 - B_{\bar{N}}(2N + 357)) + B_{\bar{N}}(2N + 359 - B_{\bar{N}}(2N + 356)) \\
&= B_{\bar{N}}(2N + 359 - (N - 5)) + B_{\bar{N}}(2N + 359 - (N + 386)) + B_{\bar{N}}(2N + 359 - (2N + 341)) \\
&= B_{\bar{N}}(N + 364) + B_{\bar{N}}(N - 27) + B_{\bar{N}}(18) = 366 + (N - 27) + 18 = \mathbf{N} + 357 \\
&(N \geq 28)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 360) &= B_{\bar{N}}(2N + 360 - B_{\bar{N}}(2N + 359)) + B_{\bar{N}}(2N + 360 - B_{\bar{N}}(2N + 358)) + B_{\bar{N}}(2N + 360 - B_{\bar{N}}(2N + 357)) \\
&= B_{\bar{N}}(2N + 360 - (N + 357)) + B_{\bar{N}}(2N + 360 - (N - 5)) + B_{\bar{N}}(2N + 360 - (N + 386)) \\
&= B_{\bar{N}}(N + 3) + B_{\bar{N}}(N + 365) + B_{\bar{N}}(N - 26) = (N + 2) + (N + 366) + (N - 26) = \mathbf{3N} + \mathbf{342} \\
&(N \geq 27)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 361) &= B_{\bar{N}}(2N + 361 - B_{\bar{N}}(2N + 360)) + B_{\bar{N}}(2N + 361 - B_{\bar{N}}(2N + 359)) + B_{\bar{N}}(2N + 361 - B_{\bar{N}}(2N + 358)) \\
&= B_{\bar{N}}(2N + 361 - (3N + 342)) + B_{\bar{N}}(2N + 361 - (N + 357)) + B_{\bar{N}}(2N + 361 - (N - 5)) \\
&= B_{\bar{N}}(-N + 19) + B_{\bar{N}}(N + 4) + B_{\bar{N}}(N + 366) = 0 + (N + 3) + (N + 368) = \mathbf{2N} + \mathbf{371} \\
&(N \geq 19)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 362) &= B_{\bar{N}}(2N + 362 - B_{\bar{N}}(2N + 361)) + B_{\bar{N}}(2N + 362 - B_{\bar{N}}(2N + 360)) + B_{\bar{N}}(2N + 362 - B_{\bar{N}}(2N + 359)) \\
&= B_{\bar{N}}(2N + 362 - (2N + 371)) + B_{\bar{N}}(2N + 362 - (3N + 342)) + B_{\bar{N}}(2N + 362 - (N + 357)) \\
&= B_{\bar{N}}(-9) + B_{\bar{N}}(-N + 20) + B_{\bar{N}}(N + 5) = 0 + 0 + 9 = \mathbf{9} \\
&(N \geq 20)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 363) &= B_{\bar{N}}(2N + 363 - B_{\bar{N}}(2N + 362)) + B_{\bar{N}}(2N + 363 - B_{\bar{N}}(2N + 361)) + B_{\bar{N}}(2N + 363 - B_{\bar{N}}(2N + 360)) \\
&= B_{\bar{N}}(2N + 363 - 9) + B_{\bar{N}}(2N + 363 - (2N + 371)) + B_{\bar{N}}(2N + 363 - (3N + 342)) \\
&= B_{\bar{N}}(2N + 354) + B_{\bar{N}}(-8) + B_{\bar{N}}(-N + 21) = (2N - 13) + 0 + 0 = \mathbf{2N} - \mathbf{13} \\
&(N \geq 21)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 364) &= B_{\bar{N}}(2N + 364 - B_{\bar{N}}(2N + 363)) + B_{\bar{N}}(2N + 364 - B_{\bar{N}}(2N + 362)) + B_{\bar{N}}(2N + 364 - B_{\bar{N}}(2N + 361)) \\
&= B_{\bar{N}}(2N + 364 - (2N - 13)) + B_{\bar{N}}(2N + 364 - 9) + B_{\bar{N}}(2N + 364 - (2N + 371)) \\
&= B_{\bar{N}}(377) + B_{\bar{N}}(2N + 355) + B_{\bar{N}}(-7) = 377 + (N + 357) + 0 = \mathbf{N} + \mathbf{734} \\
&(N \geq 377)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 365) &= B_{\bar{N}}(2N + 365 - B_{\bar{N}}(2N + 364)) + B_{\bar{N}}(2N + 365 - B_{\bar{N}}(2N + 363)) + B_{\bar{N}}(2N + 365 - B_{\bar{N}}(2N + 362)) \\
&= B_{\bar{N}}(2N + 365 - (N + 734)) + B_{\bar{N}}(2N + 365 - (2N - 13)) + B_{\bar{N}}(2N + 365 - 9) \\
&= B_{\bar{N}}(N - 369) + B_{\bar{N}}(378) + B_{\bar{N}}(2N + 356) = (N - 369) + 378 + (2N + 341) = \mathbf{3N} + \mathbf{350} \\
&(N \geq 378)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 366) &= B_{\bar{N}}(2N + 366 - B_{\bar{N}}(2N + 365)) + B_{\bar{N}}(2N + 366 - B_{\bar{N}}(2N + 364)) + B_{\bar{N}}(2N + 366 - B_{\bar{N}}(2N + 363)) \\
&= B_{\bar{N}}(2N + 366 - (3N + 350)) + B_{\bar{N}}(2N + 366 - (N + 734)) + B_{\bar{N}}(2N + 366 - (2N - 13)) \\
&= B_{\bar{N}}(-N + 16) + B_{\bar{N}}(N - 368) + B_{\bar{N}}(379) = 0 + (N - 368) + 379 = \mathbf{N} + \mathbf{11} \\
&(N \geq 379)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 367) &= B_{\bar{N}}(2N + 367 - B_{\bar{N}}(2N + 366)) + B_{\bar{N}}(2N + 367 - B_{\bar{N}}(2N + 365)) + B_{\bar{N}}(2N + 367 - B_{\bar{N}}(2N + 364)) \\
&= B_{\bar{N}}(2N + 367 - (N + 11)) + B_{\bar{N}}(2N + 367 - (3N + 350)) + B_{\bar{N}}(2N + 367 - (N + 734)) \\
&= B_{\bar{N}}(N + 356) + B_{\bar{N}}(-N + 17) + B_{\bar{N}}(N - 367) = (N - 2) + 0 + (N - 367) = \mathbf{2N} - \mathbf{369} \\
&(N \geq 368)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 368) &= B_{\bar{N}}(2N + 368 - B_{\bar{N}}(2N + 367)) + B_{\bar{N}}(2N + 368 - B_{\bar{N}}(2N + 366)) + B_{\bar{N}}(2N + 368 - B_{\bar{N}}(2N + 365)) \\
&= B_{\bar{N}}(2N + 368 - (2N - 369)) + B_{\bar{N}}(2N + 368 - (N + 11)) + B_{\bar{N}}(2N + 368 - (3N + 350)) \\
&= B_{\bar{N}}(737) + B_{\bar{N}}(N + 357) + B_{\bar{N}}(-N + 18) = 737 + 359 + 0 = \mathbf{1096} \\
&(N \geq 737)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 369) &= B_{\bar{N}}(2N + 369 - B_{\bar{N}}(2N + 368)) + B_{\bar{N}}(2N + 369 - B_{\bar{N}}(2N + 367)) + B_{\bar{N}}(2N + 369 - B_{\bar{N}}(2N + 366)) \\
&= B_{\bar{N}}(2N + 369 - 1096) + B_{\bar{N}}(2N + 369 - (2N - 369)) + B_{\bar{N}}(2N + 369 - (N + 11)) \\
&= B_{\bar{N}}(2N - 727) + B_{\bar{N}}(738) + B_{\bar{N}}(N + 358) = 7 + 738 + (N + 359) = \mathbf{N} + \mathbf{1104} \\
&(N \geq 794)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 370) &= B_{\bar{N}}(2N + 370 - B_{\bar{N}}(2N + 369)) + B_{\bar{N}}(2N + 370 - B_{\bar{N}}(2N + 368)) + B_{\bar{N}}(2N + 370 - B_{\bar{N}}(2N + 367)) \\
&= B_{\bar{N}}(2N + 370 - (N + 1104)) + B_{\bar{N}}(2N + 370 - 1096) + B_{\bar{N}}(2N + 370 - (2N - 369)) \\
&= B_{\bar{N}}(N - 734) + B_{\bar{N}}(2N - 726) + B_{\bar{N}}(739) = (N - 734) + \left(\frac{16N}{7} - \frac{1145}{7}\right) + 739 = \frac{23N}{7} - \frac{1110}{7} \\
&(N \geq 793)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 371) &= B_{\bar{N}}(2N + 371 - B_{\bar{N}}(2N + 370)) + B_{\bar{N}}(2N + 371 - B_{\bar{N}}(2N + 369)) + B_{\bar{N}}(2N + 371 - B_{\bar{N}}(2N + 368)) \\
&= B_{\bar{N}}\left(2N + 371 - \left(\frac{23N}{7} - \frac{1110}{7}\right)\right) + B_{\bar{N}}(2N + 371 - (N + 1104)) + B_{\bar{N}}(2N + 371 - 1096) \\
&= B_{\bar{N}}\left(-\frac{9N}{7} + \frac{3707}{7}\right) + B_{\bar{N}}(N - 733) + B_{\bar{N}}(2N - 725) = 0 + (N - 733) + \left(\frac{15N}{7} - \frac{779}{7}\right) = \frac{22N}{7} - \frac{5910}{7} \\
&(N \geq 792)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 372) &= B_{\bar{N}}(2N + 372 - B_{\bar{N}}(2N + 371)) + B_{\bar{N}}(2N + 372 - B_{\bar{N}}(2N + 370)) + B_{\bar{N}}(2N + 372 - B_{\bar{N}}(2N + 369)) \\
&= B_{\bar{N}}\left(2N + 372 - \left(\frac{22N}{7} - \frac{5910}{7}\right)\right) + B_{\bar{N}}\left(2N + 372 - \left(\frac{23N}{7} - \frac{1110}{7}\right)\right) + B_{\bar{N}}(2N + 372 - (N + 1104)) \\
&= B_{\bar{N}}\left(-\frac{8N}{7} + \frac{8514}{7}\right) + B_{\bar{N}}\left(-\frac{9N}{7} + \frac{3714}{7}\right) + B_{\bar{N}}(N - 732) = 0 + 0 + (N - 732) = \mathbf{N} - 732 \\
&(N \geq 1065)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 373) &= B_{\bar{N}}(2N + 373 - B_{\bar{N}}(2N + 372)) + B_{\bar{N}}(2N + 373 - B_{\bar{N}}(2N + 371)) + B_{\bar{N}}(2N + 373 - B_{\bar{N}}(2N + 370)) \\
&= B_{\bar{N}}(2N + 373 - (N - 732)) + B_{\bar{N}}\left(2N + 373 - \left(\frac{22N}{7} - \frac{5910}{7}\right)\right) + B_{\bar{N}}\left(2N + 373 - \left(\frac{23N}{7} - \frac{1110}{7}\right)\right) \\
&= B_{\bar{N}}(N + 1105) + B_{\bar{N}}\left(-\frac{8N}{7} + \frac{8521}{7}\right) + B_{\bar{N}}\left(-\frac{9N}{7} + \frac{3721}{7}\right) = (N - 2) + 0 + 0 = \mathbf{N} - 2 \\
&(N \geq 1066)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(\mathbf{2N} + \mathbf{374}) &= B_{\bar{N}}(2N + 374 - B_{\bar{N}}(2N + 373)) + B_{\bar{N}}(2N + 374 - B_{\bar{N}}(2N + 372)) + B_{\bar{N}}(2N + 374 - B_{\bar{N}}(2N + 371)) \\
&= B_{\bar{N}}(2N + 374 - (N - 2)) + B_{\bar{N}}(2N + 374 - (N - 732)) + B_{\bar{N}}\left(2N + 374 - \left(\frac{22N}{7} - \frac{5910}{7}\right)\right) \\
&= B_{\bar{N}}(N + 376) + B_{\bar{N}}(N + 1106) + B_{\bar{N}}\left(-\frac{8N}{7} + \frac{8528}{7}\right) = (2N + 46) + 1108 + 0 = \mathbf{2N} + \mathbf{1154} \\
&(N \geq 1066)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(\mathbf{2N} + \mathbf{375}) &= B_{\bar{N}}(2N + 375 - B_{\bar{N}}(2N + 374)) + B_{\bar{N}}(2N + 375 - B_{\bar{N}}(2N + 373)) + B_{\bar{N}}(2N + 375 - B_{\bar{N}}(2N + 372)) \\
&= B_{\bar{N}}(2N + 375 - (2N + 1154)) + B_{\bar{N}}(2N + 375 - (N - 2)) + B_{\bar{N}}(2N + 375 - (N - 732)) \\
&= B_{\bar{N}}(-779) + B_{\bar{N}}(N + 377) + B_{\bar{N}}(N + 1107) = 0 + (N - 2) + (N + 1108) = \mathbf{2N} + \mathbf{1106} \\
&(N \geq 1)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(\mathbf{2N} + \mathbf{376}) &= B_{\bar{N}}(2N + 376 - B_{\bar{N}}(2N + 375)) + B_{\bar{N}}(2N + 376 - B_{\bar{N}}(2N + 374)) + B_{\bar{N}}(2N + 376 - B_{\bar{N}}(2N + 373)) \\
&= B_{\bar{N}}(2N + 376 - (2N + 1106)) + B_{\bar{N}}(2N + 376 - (2N + 1154)) + B_{\bar{N}}(2N + 376 - (N - 2)) \\
&= B_{\bar{N}}(-730) + B_{\bar{N}}(-778) + B_{\bar{N}}(N + 378) = 0 + 0 + 380 = \mathbf{380} \\
&(N \geq 1)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(\mathbf{2N} + \mathbf{377}) &= B_{\bar{N}}(2N + 377 - B_{\bar{N}}(2N + 376)) + B_{\bar{N}}(2N + 377 - B_{\bar{N}}(2N + 375)) + B_{\bar{N}}(2N + 377 - B_{\bar{N}}(2N + 374)) \\
&= B_{\bar{N}}(2N + 377 - 380) + B_{\bar{N}}(2N + 377 - (2N + 1106)) + B_{\bar{N}}(2N + 377 - (2N + 1154)) \\
&= B_{\bar{N}}(2N - 3) + B_{\bar{N}}(-729) + B_{\bar{N}}(-777) = (N - 2) + 0 + 0 = \mathbf{N} - \mathbf{2} \\
&(N \geq 70)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(\mathbf{2N} + \mathbf{378}) &= B_{\bar{N}}(2N + 378 - B_{\bar{N}}(2N + 377)) + B_{\bar{N}}(2N + 378 - B_{\bar{N}}(2N + 376)) + B_{\bar{N}}(2N + 378 - B_{\bar{N}}(2N + 375)) \\
&= B_{\bar{N}}(2N + 378 - (N - 2)) + B_{\bar{N}}(2N + 378 - 380) + B_{\bar{N}}(2N + 378 - (2N + 1106)) \\
&= B_{\bar{N}}(N + 380) + B_{\bar{N}}(2N - 2) + B_{\bar{N}}(-728) = (N + 382) + N + 0 = \mathbf{2N} + \mathbf{382} \\
&(N \geq 69)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 379) &= B_{\bar{N}}(2N + 379 - B_{\bar{N}}(2N + 378)) + B_{\bar{N}}(2N + 379 - B_{\bar{N}}(2N + 377)) + B_{\bar{N}}(2N + 379 - B_{\bar{N}}(2N + 376)) \\
&= B_{\bar{N}}(2N + 379 - (2N + 382)) + B_{\bar{N}}(2N + 379 - (N - 2)) + B_{\bar{N}}(2N + 379 - 380) \\
&= B_{\bar{N}}(-3) + B_{\bar{N}}(N + 381) + B_{\bar{N}}(2N - 1) = 0 + 7 + (N + 5) = \mathbf{N} + \mathbf{12} \\
&(N \geq 1)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 380) &= B_{\bar{N}}(2N + 380 - B_{\bar{N}}(2N + 379)) + B_{\bar{N}}(2N + 380 - B_{\bar{N}}(2N + 378)) + B_{\bar{N}}(2N + 380 - B_{\bar{N}}(2N + 377)) \\
&= B_{\bar{N}}(2N + 380 - (N + 12)) + B_{\bar{N}}(2N + 380 - (2N + 382)) + B_{\bar{N}}(2N + 380 - (N - 2)) \\
&= B_{\bar{N}}(N + 368) + B_{\bar{N}}(-2) + B_{\bar{N}}(N + 382) = (2N + 149) + 0 + (2N + 153) = \mathbf{4N} + \mathbf{302} \\
&(N \geq 1)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 381) &= B_{\bar{N}}(2N + 381 - B_{\bar{N}}(2N + 380)) + B_{\bar{N}}(2N + 381 - B_{\bar{N}}(2N + 379)) + B_{\bar{N}}(2N + 381 - B_{\bar{N}}(2N + 378)) \\
&= B_{\bar{N}}(2N + 381 - (4N + 302)) + B_{\bar{N}}(2N + 381 - (N + 12)) + B_{\bar{N}}(2N + 381 - (2N + 382)) \\
&= B_{\bar{N}}(-2N + 79) + B_{\bar{N}}(N + 369) + B_{\bar{N}}(-1) = 0 + (2N + 45) + 0 = \mathbf{2N} + \mathbf{45} \\
&(N \geq 40)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 382) &= B_{\bar{N}}(2N + 382 - B_{\bar{N}}(2N + 381)) + B_{\bar{N}}(2N + 382 - B_{\bar{N}}(2N + 380)) + B_{\bar{N}}(2N + 382 - B_{\bar{N}}(2N + 379)) \\
&= B_{\bar{N}}(2N + 382 - (2N + 45)) + B_{\bar{N}}(2N + 382 - (4N + 302)) + B_{\bar{N}}(2N + 382 - (N + 12)) \\
&= B_{\bar{N}}(337) + B_{\bar{N}}(-2N + 80) + B_{\bar{N}}(N + 370) = 337 + 0 + (N - 2) = \mathbf{N} + \mathbf{335} \\
&(N \geq 337)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 383) &= B_{\bar{N}}(2N + 383 - B_{\bar{N}}(2N + 382)) + B_{\bar{N}}(2N + 383 - B_{\bar{N}}(2N + 381)) + B_{\bar{N}}(2N + 383 - B_{\bar{N}}(2N + 380)) \\
&= B_{\bar{N}}(2N + 383 - (N + 335)) + B_{\bar{N}}(2N + 383 - (2N + 45)) + B_{\bar{N}}(2N + 383 - (4N + 302)) \\
&= B_{\bar{N}}(N + 48) + B_{\bar{N}}(338) + B_{\bar{N}}(-2N + 81) = (N + 39) + 338 + 0 = \mathbf{N} + \mathbf{377} \\
&(N \geq 338)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 384) &= B_{\bar{N}}(2N + 384 - B_{\bar{N}}(2N + 383)) + B_{\bar{N}}(2N + 384 - B_{\bar{N}}(2N + 382)) + B_{\bar{N}}(2N + 384 - B_{\bar{N}}(2N + 381)) \\
&= B_{\bar{N}}(2N + 384 - (N + 377)) + B_{\bar{N}}(2N + 384 - (N + 335)) + B_{\bar{N}}(2N + 384 - (2N + 45)) \\
&= B_{\bar{N}}(N + 7) + B_{\bar{N}}(N + 49) + B_{\bar{N}}(339) = (N + 5) + (N + 47) + 339 = \mathbf{2N} + \mathbf{391} \\
&(N \geq 339)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 385) &= B_{\bar{N}}(2N + 385 - B_{\bar{N}}(2N + 384)) + B_{\bar{N}}(2N + 385 - B_{\bar{N}}(2N + 383)) + B_{\bar{N}}(2N + 385 - B_{\bar{N}}(2N + 382)) \\
&= B_{\bar{N}}(2N + 385 - (2N + 391)) + B_{\bar{N}}(2N + 385 - (N + 377)) + B_{\bar{N}}(2N + 385 - (N + 335)) \\
&= B_{\bar{N}}(-6) + B_{\bar{N}}(N + 8) + B_{\bar{N}}(N + 50) = 0 + (N + 6) + (N + 27) = \mathbf{2N} + \mathbf{33} \\
&(N \geq 1)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 386) &= B_{\bar{N}}(2N + 386 - B_{\bar{N}}(2N + 385)) + B_{\bar{N}}(2N + 386 - B_{\bar{N}}(2N + 384)) + B_{\bar{N}}(2N + 386 - B_{\bar{N}}(2N + 383)) \\
&= B_{\bar{N}}(2N + 386 - (2N + 33)) + B_{\bar{N}}(2N + 386 - (2N + 391)) + B_{\bar{N}}(2N + 386 - (N + 377)) \\
&= B_{\bar{N}}(353) + B_{\bar{N}}(-5) + B_{\bar{N}}(N + 9) = 353 + 0 + 12 = \mathbf{365} \\
&(N \geq 353)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 387) &= B_{\bar{N}}(2N + 387 - B_{\bar{N}}(2N + 386)) + B_{\bar{N}}(2N + 387 - B_{\bar{N}}(2N + 385)) + B_{\bar{N}}(2N + 387 - B_{\bar{N}}(2N + 384)) \\
&= B_{\bar{N}}(2N + 387 - 365) + B_{\bar{N}}(2N + 387 - (2N + 33)) + B_{\bar{N}}(2N + 387 - (2N + 391)) \\
&= B_{\bar{N}}(2N + 22) + B_{\bar{N}}(354) + B_{\bar{N}}(-4) = (2N + 15) + 354 + 0 = \mathbf{2N} + \mathbf{369} \\
&(N \geq 354)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 388) &= B_{\bar{N}}(2N + 388 - B_{\bar{N}}(2N + 387)) + B_{\bar{N}}(2N + 388 - B_{\bar{N}}(2N + 386)) + B_{\bar{N}}(2N + 388 - B_{\bar{N}}(2N + 385)) \\
&= B_{\bar{N}}(2N + 388 - (2N + 369)) + B_{\bar{N}}(2N + 388 - 365) + B_{\bar{N}}(2N + 388 - (2N + 33)) \\
&= B_{\bar{N}}(19) + B_{\bar{N}}(2N + 23) + B_{\bar{N}}(355) = 19 + (3N + 10) + 355 = \mathbf{3N} + \mathbf{384} \\
&(N \geq 355)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 389) &= B_{\bar{N}}(2N + 389 - B_{\bar{N}}(2N + 388)) + B_{\bar{N}}(2N + 389 - B_{\bar{N}}(2N + 387)) + B_{\bar{N}}(2N + 389 - B_{\bar{N}}(2N + 386)) \\
&= B_{\bar{N}}(2N + 389 - (3N + 384)) + B_{\bar{N}}(2N + 389 - (2N + 369)) + B_{\bar{N}}(2N + 389 - 365) \\
&= B_{\bar{N}}(-N + 5) + B_{\bar{N}}(20) + B_{\bar{N}}(2N + 24) = 0 + 20 + 16 = \mathbf{36} \\
&(N \geq 20)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 390) &= B_{\bar{N}}(2N + 390 - B_{\bar{N}}(2N + 389)) + B_{\bar{N}}(2N + 390 - B_{\bar{N}}(2N + 388)) + B_{\bar{N}}(2N + 390 - B_{\bar{N}}(2N + 387)) \\
&= B_{\bar{N}}(2N + 390 - 36) + B_{\bar{N}}(2N + 390 - (3N + 384)) + B_{\bar{N}}(2N + 390 - (2N + 369)) \\
&= B_{\bar{N}}(2N + 354) + B_{\bar{N}}(-N + 6) + B_{\bar{N}}(21) = (2N - 13) + 0 + 21 = \mathbf{2N} + \mathbf{8} \\
&(N \geq 21)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 391) &= B_{\bar{N}}(2N + 391 - B_{\bar{N}}(2N + 390)) + B_{\bar{N}}(2N + 391 - B_{\bar{N}}(2N + 389)) + B_{\bar{N}}(2N + 391 - B_{\bar{N}}(2N + 388)) \\
&= B_{\bar{N}}(2N + 391 - (2N + 8)) + B_{\bar{N}}(2N + 391 - 36) + B_{\bar{N}}(2N + 391 - (3N + 384)) \\
&= B_{\bar{N}}(383) + B_{\bar{N}}(2N + 355) + B_{\bar{N}}(-N + 7) = 383 + (N + 357) + 0 = \mathbf{N} + \mathbf{740} \\
&(N \geq 383)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 392) &= B_{\bar{N}}(2N + 392 - B_{\bar{N}}(2N + 391)) + B_{\bar{N}}(2N + 392 - B_{\bar{N}}(2N + 390)) + B_{\bar{N}}(2N + 392 - B_{\bar{N}}(2N + 389)) \\
&= B_{\bar{N}}(2N + 392 - (N + 740)) + B_{\bar{N}}(2N + 392 - (2N + 8)) + B_{\bar{N}}(2N + 392 - 36) \\
&= B_{\bar{N}}(N - 348) + B_{\bar{N}}(384) + B_{\bar{N}}(2N + 356) = (N - 348) + 384 + (2N + 341) = \mathbf{3N} + \mathbf{377} \\
&(N \geq 384)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 393) &= B_{\bar{N}}(2N + 393 - B_{\bar{N}}(2N + 392)) + B_{\bar{N}}(2N + 393 - B_{\bar{N}}(2N + 391)) + B_{\bar{N}}(2N + 393 - B_{\bar{N}}(2N + 390)) \\
&= B_{\bar{N}}(2N + 393 - (3N + 377)) + B_{\bar{N}}(2N + 393 - (N + 740)) + B_{\bar{N}}(2N + 393 - (2N + 8)) \\
&= B_{\bar{N}}(-N + 16) + B_{\bar{N}}(N - 347) + B_{\bar{N}}(385) = 0 + (N - 347) + 385 = \mathbf{N} + \mathbf{38} \\
&(N \geq 385)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 394) &= B_{\bar{N}}(2N + 394 - B_{\bar{N}}(2N + 393)) + B_{\bar{N}}(2N + 394 - B_{\bar{N}}(2N + 392)) + B_{\bar{N}}(2N + 394 - B_{\bar{N}}(2N + 391)) \\
&= B_{\bar{N}}(2N + 394 - (N + 38)) + B_{\bar{N}}(2N + 394 - (3N + 377)) + B_{\bar{N}}(2N + 394 - (N + 740)) \\
&= B_{\bar{N}}(N + 356) + B_{\bar{N}}(-N + 17) + B_{\bar{N}}(N - 346) = (N - 2) + 0 + (N - 346) = \mathbf{2N} - \mathbf{348} \\
&(N \geq 347)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 395) &= B_{\bar{N}}(2N + 395 - B_{\bar{N}}(2N + 394)) + B_{\bar{N}}(2N + 395 - B_{\bar{N}}(2N + 393)) + B_{\bar{N}}(2N + 395 - B_{\bar{N}}(2N + 392)) \\
&= B_{\bar{N}}(2N + 395 - (2N - 348)) + B_{\bar{N}}(2N + 395 - (N + 38)) + B_{\bar{N}}(2N + 395 - (3N + 377)) \\
&= B_{\bar{N}}(743) + B_{\bar{N}}(N + 357) + B_{\bar{N}}(-N + 18) = 743 + 359 + 0 = \mathbf{1102} \\
&(N \geq 743)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 396) &= B_{\bar{N}}(2N + 396 - B_{\bar{N}}(2N + 395)) + B_{\bar{N}}(2N + 396 - B_{\bar{N}}(2N + 394)) + B_{\bar{N}}(2N + 396 - B_{\bar{N}}(2N + 393)) \\
&= B_{\bar{N}}(2N + 396 - 1102) + B_{\bar{N}}(2N + 396 - (2N - 348)) + B_{\bar{N}}(2N + 396 - (N + 38)) \\
&= B_{\bar{N}}(2N - 706) + B_{\bar{N}}(744) + B_{\bar{N}}(N + 358) = 7 + 744 + (N + 359) = \mathbf{N} + \mathbf{1110} \\
&(N \geq 773)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 397) &= B_{\bar{N}}(2N + 397 - B_{\bar{N}}(2N + 396)) + B_{\bar{N}}(2N + 397 - B_{\bar{N}}(2N + 395)) + B_{\bar{N}}(2N + 397 - B_{\bar{N}}(2N + 394)) \\
&= B_{\bar{N}}(2N + 397 - (N + 1110)) + B_{\bar{N}}(2N + 397 - 1102) + B_{\bar{N}}(2N + 397 - (2N - 348)) \\
&= B_{\bar{N}}(N - 713) + B_{\bar{N}}(2N - 705) + B_{\bar{N}}(745) = (N - 713) + \left(\frac{16N}{7} - \frac{1103}{7} \right) + 745 = \frac{23N}{7} - \frac{879}{7} \\
&(N \geq 772)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 398) &= B_{\bar{N}}(2N + 398 - B_{\bar{N}}(2N + 397)) + B_{\bar{N}}(2N + 398 - B_{\bar{N}}(2N + 396)) + B_{\bar{N}}(2N + 398 - B_{\bar{N}}(2N + 395)) \\
&= B_{\bar{N}}\left(2N + 398 - \left(\frac{23N}{7} - \frac{879}{7}\right)\right) + B_{\bar{N}}(2N + 398 - (N + 1110)) + B_{\bar{N}}(2N + 398 - 1102) \\
&= B_{\bar{N}}\left(-\frac{9N}{7} + \frac{3665}{7}\right) + B_{\bar{N}}(N - 712) + B_{\bar{N}}(2N - 704) = 0 + (N - 712) + \left(\frac{15N}{7} - \frac{758}{7}\right) = \frac{22N}{7} - \frac{5742}{7} \\
&(N \geq 771)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(\mathbf{2N} + \mathbf{399}) &= B_{\bar{N}}(2N + 399 - B_{\bar{N}}(2N + 398)) + B_{\bar{N}}(2N + 399 - B_{\bar{N}}(2N + 397)) + B_{\bar{N}}(2N + 399 - B_{\bar{N}}(2N + 396)) \\
&= B_{\bar{N}}\left(2N + 399 - \left(\frac{22N}{7} - \frac{5742}{7}\right)\right) + B_{\bar{N}}\left(2N + 399 - \left(\frac{23N}{7} - \frac{879}{7}\right)\right) + B_{\bar{N}}(2N + 399 - (N + 1110)) \\
&= B_{\bar{N}}\left(-\frac{8N}{7} + \frac{8535}{7}\right) + B_{\bar{N}}\left(-\frac{9N}{7} + \frac{3672}{7}\right) + B_{\bar{N}}(N - 711) = 0 + 0 + (N - 711) = \mathbf{N} - \mathbf{711} \\
&(N \geq 1067)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(\mathbf{2N} + \mathbf{400}) &= B_{\bar{N}}(2N + 400 - B_{\bar{N}}(2N + 399)) + B_{\bar{N}}(2N + 400 - B_{\bar{N}}(2N + 398)) + B_{\bar{N}}(2N + 400 - B_{\bar{N}}(2N + 397)) \\
&= B_{\bar{N}}(2N + 400 - (N - 711)) + B_{\bar{N}}\left(2N + 400 - \left(\frac{22N}{7} - \frac{5742}{7}\right)\right) + B_{\bar{N}}\left(2N + 400 - \left(\frac{23N}{7} - \frac{879}{7}\right)\right) \\
&= B_{\bar{N}}(N + 1111) + B_{\bar{N}}\left(-\frac{8N}{7} + \frac{8542}{7}\right) + B_{\bar{N}}\left(-\frac{9N}{7} + \frac{3679}{7}\right) = (2N + 151) + 0 + 0 = \mathbf{2N} + \mathbf{151} \\
&(N \geq 1068)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(\mathbf{2N} + \mathbf{401}) &= B_{\bar{N}}(2N + 401 - B_{\bar{N}}(2N + 400)) + B_{\bar{N}}(2N + 401 - B_{\bar{N}}(2N + 399)) + B_{\bar{N}}(2N + 401 - B_{\bar{N}}(2N + 398)) \\
&= B_{\bar{N}}(2N + 401 - (2N + 151)) + B_{\bar{N}}(2N + 401 - (N - 711)) + B_{\bar{N}}\left(2N + 401 - \left(\frac{22N}{7} - \frac{5742}{7}\right)\right) \\
&= B_{\bar{N}}(250) + B_{\bar{N}}(N + 1112) + B_{\bar{N}}\left(-\frac{8N}{7} + \frac{8549}{7}\right) = 250 + (N - 2) + 0 = \mathbf{N} + \mathbf{248} \\
&(N \geq 1069)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(\mathbf{2N} + \mathbf{402}) &= B_{\bar{N}}(2N + 402 - B_{\bar{N}}(2N + 401)) + B_{\bar{N}}(2N + 402 - B_{\bar{N}}(2N + 400)) + B_{\bar{N}}(2N + 402 - B_{\bar{N}}(2N + 399)) \\
&= B_{\bar{N}}(2N + 402 - (N + 248)) + B_{\bar{N}}(2N + 402 - (2N + 151)) + B_{\bar{N}}(2N + 402 - (N - 711)) \\
&= B_{\bar{N}}(N + 154) + B_{\bar{N}}(251) + B_{\bar{N}}(N + 1113) = 156 + 251 + 1115 = \mathbf{1522} \\
&(N \geq 251)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 403) &= B_{\bar{N}}(2N + 403 - B_{\bar{N}}(2N + 402)) + B_{\bar{N}}(2N + 403 - B_{\bar{N}}(2N + 401)) + B_{\bar{N}}(2N + 403 - B_{\bar{N}}(2N + 400)) \\
&= B_{\bar{N}}(2N + 403 - 1522) + B_{\bar{N}}(2N + 403 - (N + 248)) + B_{\bar{N}}(2N + 403 - (2N + 151)) \\
&= B_{\bar{N}}(2N - 1119) + B_{\bar{N}}(N + 155) + B_{\bar{N}}(252) = 7 + (N + 156) + 252 = \mathbf{N} + 415 \\
&(N \geq 1186)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 404) &= B_{\bar{N}}(2N + 404 - B_{\bar{N}}(2N + 403)) + B_{\bar{N}}(2N + 404 - B_{\bar{N}}(2N + 402)) + B_{\bar{N}}(2N + 404 - B_{\bar{N}}(2N + 401)) \\
&= B_{\bar{N}}(2N + 404 - (N + 415)) + B_{\bar{N}}(2N + 404 - 1522) + B_{\bar{N}}(2N + 404 - (N + 248)) \\
&= B_{\bar{N}}(N - 11) + B_{\bar{N}}(2N - 1118) + B_{\bar{N}}(N + 156) = (N - 11) + \left(\frac{16N}{7} - \frac{1929}{7}\right) + (N + 158) = \frac{30\mathbf{N}}{7} - \frac{900}{7} \\
&(N \geq 1185)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 405) &= B_{\bar{N}}(2N + 405 - B_{\bar{N}}(2N + 404)) + B_{\bar{N}}(2N + 405 - B_{\bar{N}}(2N + 403)) + B_{\bar{N}}(2N + 405 - B_{\bar{N}}(2N + 402)) \\
&= B_{\bar{N}}\left(2N + 405 - \left(\frac{30N}{7} - \frac{900}{7}\right)\right) + B_{\bar{N}}(2N + 405 - (N + 415)) + B_{\bar{N}}(2N + 405 - 1522) \\
&= B_{\bar{N}}\left(-\frac{16N}{7} + \frac{3735}{7}\right) + B_{\bar{N}}(N - 10) + B_{\bar{N}}(2N - 1117) = 0 + (N - 10) + \left(\frac{15N}{7} - \frac{1171}{7}\right) = \frac{22\mathbf{N}}{7} - \frac{1241}{7} \\
&(N \geq 1184)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 406) &= B_{\bar{N}}(2N + 406 - B_{\bar{N}}(2N + 405)) + B_{\bar{N}}(2N + 406 - B_{\bar{N}}(2N + 404)) + B_{\bar{N}}(2N + 406 - B_{\bar{N}}(2N + 403)) \\
&= B_{\bar{N}}\left(2N + 406 - \left(\frac{22N}{7} - \frac{1241}{7}\right)\right) + B_{\bar{N}}\left(2N + 406 - \left(\frac{30N}{7} - \frac{900}{7}\right)\right) + B_{\bar{N}}(2N + 406 - (N + 415)) \\
&= B_{\bar{N}}\left(-\frac{8N}{7} + \frac{4083}{7}\right) + B_{\bar{N}}\left(-\frac{16N}{7} + \frac{3742}{7}\right) + B_{\bar{N}}(N - 9) = 0 + 0 + (N - 9) = \mathbf{N} - 9 \\
&(N \geq 511)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 407) &= B_{\bar{N}}(2N + 407 - B_{\bar{N}}(2N + 406)) + B_{\bar{N}}(2N + 407 - B_{\bar{N}}(2N + 405)) + B_{\bar{N}}(2N + 407 - B_{\bar{N}}(2N + 404)) \\
&= B_{\bar{N}}(2N + 407 - (N - 9)) + B_{\bar{N}}\left(2N + 407 - \left(\frac{22N}{7} - \frac{1241}{7}\right)\right) + B_{\bar{N}}\left(2N + 407 - \left(\frac{30N}{7} - \frac{900}{7}\right)\right) \\
&= B_{\bar{N}}(N + 416) + B_{\bar{N}}\left(-\frac{8N}{7} + \frac{4090}{7}\right) + B_{\bar{N}}\left(-\frac{16N}{7} + \frac{3749}{7}\right) = 7 + 0 + 0 = \mathbf{7} \\
&(N \geq 512)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 408) &= B_{\bar{N}}(2N + 408 - B_{\bar{N}}(2N + 407)) + B_{\bar{N}}(2N + 408 - B_{\bar{N}}(2N + 406)) + B_{\bar{N}}(2N + 408 - B_{\bar{N}}(2N + 405)) \\
&= B_{\bar{N}}(2N + 408 - 7) + B_{\bar{N}}(2N + 408 - (N - 9)) + B_{\bar{N}}\left(2N + 408 - \left(\frac{22N}{7} - \frac{1241}{7}\right)\right) \\
&= B_{\bar{N}}(2N + 401) + B_{\bar{N}}(N + 417) + B_{\bar{N}}\left(-\frac{8N}{7} + \frac{4097}{7}\right) = (N + 248) + (2N + 163) + 0 = \mathbf{3N} + \mathbf{411} \\
&(N \geq 513)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 409) &= B_{\bar{N}}(2N + 409 - B_{\bar{N}}(2N + 408)) + B_{\bar{N}}(2N + 409 - B_{\bar{N}}(2N + 407)) + B_{\bar{N}}(2N + 409 - B_{\bar{N}}(2N + 406)) \\
&= B_{\bar{N}}(2N + 409 - (3N + 411)) + B_{\bar{N}}(2N + 409 - 7) + B_{\bar{N}}(2N + 409 - (N - 9)) \\
&= B_{\bar{N}}(-N - 2) + B_{\bar{N}}(2N + 402) + B_{\bar{N}}(N + 418) = 0 + 1522 + (2N + 52) = \mathbf{2N} + \mathbf{1574} \\
&(N \geq 1)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 410) &= B_{\bar{N}}(2N + 410 - B_{\bar{N}}(2N + 409)) + B_{\bar{N}}(2N + 410 - B_{\bar{N}}(2N + 408)) + B_{\bar{N}}(2N + 410 - B_{\bar{N}}(2N + 407)) \\
&= B_{\bar{N}}(2N + 410 - (2N + 1574)) + B_{\bar{N}}(2N + 410 - (3N + 411)) + B_{\bar{N}}(2N + 410 - 7) \\
&= B_{\bar{N}}(-1164) + B_{\bar{N}}(-N - 1) + B_{\bar{N}}(2N + 403) = 0 + 0 + (N + 415) = \mathbf{N} + \mathbf{415} \\
&(N \geq 1)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 411) &= B_{\bar{N}}(2N + 411 - B_{\bar{N}}(2N + 410)) + B_{\bar{N}}(2N + 411 - B_{\bar{N}}(2N + 409)) + B_{\bar{N}}(2N + 411 - B_{\bar{N}}(2N + 408)) \\
&= B_{\bar{N}}(2N + 411 - (N + 415)) + B_{\bar{N}}(2N + 411 - (2N + 1574)) + B_{\bar{N}}(2N + 411 - (3N + 411)) \\
&= B_{\bar{N}}(N - 4) + B_{\bar{N}}(-1163) + B_{\bar{N}}(-N) = (N - 4) + 0 + 0 = \mathbf{N} - \mathbf{4} \\
&(N \geq 5)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 412) &= B_{\bar{N}}(2N + 412 - B_{\bar{N}}(2N + 411)) + B_{\bar{N}}(2N + 412 - B_{\bar{N}}(2N + 410)) + B_{\bar{N}}(2N + 412 - B_{\bar{N}}(2N + 409)) \\
&= B_{\bar{N}}(2N + 412 - (N - 4)) + B_{\bar{N}}(2N + 412 - (N + 415)) + B_{\bar{N}}(2N + 412 - (2N + 1574)) \\
&= B_{\bar{N}}(N + 416) + B_{\bar{N}}(N - 3) + B_{\bar{N}}(-1162) = 7 + (N - 3) + 0 = \mathbf{N} + \mathbf{4} \\
&(N \geq 4)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 413) &= B_{\bar{N}}(2N + 413 - B_{\bar{N}}(2N + 412)) + B_{\bar{N}}(2N + 413 - B_{\bar{N}}(2N + 411)) + B_{\bar{N}}(2N + 413 - B_{\bar{N}}(2N + 410)) \\
&= B_{\bar{N}}(2N + 413 - (N + 4)) + B_{\bar{N}}(2N + 413 - (N - 4)) + B_{\bar{N}}(2N + 413 - (N + 415)) \\
&= B_{\bar{N}}(N + 409) + B_{\bar{N}}(N + 417) + B_{\bar{N}}(N - 2) = 7 + (2N + 163) + (N - 2) = \mathbf{3N} + \mathbf{168} \\
&(N \geq 3)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 414) &= B_{\bar{N}}(2N + 414 - B_{\bar{N}}(2N + 413)) + B_{\bar{N}}(2N + 414 - B_{\bar{N}}(2N + 412)) + B_{\bar{N}}(2N + 414 - B_{\bar{N}}(2N + 411)) \\
&= B_{\bar{N}}(2N + 414 - (3N + 168)) + B_{\bar{N}}(2N + 414 - (N + 4)) + B_{\bar{N}}(2N + 414 - (N - 4)) \\
&= B_{\bar{N}}(-N + 246) + B_{\bar{N}}(N + 410) + B_{\bar{N}}(N + 418) = 0 + (2N + 161) + (2N + 52) = \mathbf{4N} + \mathbf{213} \\
&(N \geq 246)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 415) &= B_{\bar{N}}(2N + 415 - B_{\bar{N}}(2N + 414)) + B_{\bar{N}}(2N + 415 - B_{\bar{N}}(2N + 413)) + B_{\bar{N}}(2N + 415 - B_{\bar{N}}(2N + 412)) \\
&= B_{\bar{N}}(2N + 415 - (4N + 213)) + B_{\bar{N}}(2N + 415 - (3N + 168)) + B_{\bar{N}}(2N + 415 - (N + 4)) \\
&= B_{\bar{N}}(-2N + 202) + B_{\bar{N}}(-N + 247) + B_{\bar{N}}(N + 411) = 0 + 0 + (2N + 51) = \mathbf{2N} + \mathbf{51} \\
&(N \geq 247)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 416) &= B_{\bar{N}}(2N + 416 - B_{\bar{N}}(2N + 415)) + B_{\bar{N}}(2N + 416 - B_{\bar{N}}(2N + 414)) + B_{\bar{N}}(2N + 416 - B_{\bar{N}}(2N + 413)) \\
&= B_{\bar{N}}(2N + 416 - (2N + 51)) + B_{\bar{N}}(2N + 416 - (4N + 213)) + B_{\bar{N}}(2N + 416 - (3N + 168)) \\
&= B_{\bar{N}}(365) + B_{\bar{N}}(-2N + 203) + B_{\bar{N}}(-N + 248) = 365 + 0 + 0 = \mathbf{365} \\
&(N \geq 365)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 417) &= B_{\bar{N}}(2N + 417 - B_{\bar{N}}(2N + 416)) + B_{\bar{N}}(2N + 417 - B_{\bar{N}}(2N + 415)) + B_{\bar{N}}(2N + 417 - B_{\bar{N}}(2N + 414)) \\
&= B_{\bar{N}}(2N + 417 - 365) + B_{\bar{N}}(2N + 417 - (2N + 51)) + B_{\bar{N}}(2N + 417 - (4N + 213)) \\
&= B_{\bar{N}}(2N + 52) + B_{\bar{N}}(366) + B_{\bar{N}}(-2N + 204) = 55 + 366 + 0 = \mathbf{421} \\
&(N \geq 366)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 418) &= B_{\bar{N}}(2N + 418 - B_{\bar{N}}(2N + 417)) + B_{\bar{N}}(2N + 418 - B_{\bar{N}}(2N + 416)) + B_{\bar{N}}(2N + 418 - B_{\bar{N}}(2N + 415)) \\
&= B_{\bar{N}}(2N + 418 - 421) + B_{\bar{N}}(2N + 418 - 365) + B_{\bar{N}}(2N + 418 - (2N + 51)) \\
&= B_{\bar{N}}(2N - 3) + B_{\bar{N}}(2N + 53) + B_{\bar{N}}(367) = (N - 2) + (N + 56) + 367 = \mathbf{2N} + \mathbf{421} \\
&(N \geq 367)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 419) &= B_{\bar{N}}(2N + 419 - B_{\bar{N}}(2N + 418)) + B_{\bar{N}}(2N + 419 - B_{\bar{N}}(2N + 417)) + B_{\bar{N}}(2N + 419 - B_{\bar{N}}(2N + 416)) \\
&= B_{\bar{N}}(2N + 419 - (2N + 421)) + B_{\bar{N}}(2N + 419 - 421) + B_{\bar{N}}(2N + 419 - 365) \\
&= B_{\bar{N}}(-2) + B_{\bar{N}}(2N - 2) + B_{\bar{N}}(2N + 54) = 0 + N + (2N + 60) = \mathbf{3N} + \mathbf{60} \\
&(N \geq 69)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 420) &= B_{\bar{N}}(2N + 420 - B_{\bar{N}}(2N + 419)) + B_{\bar{N}}(2N + 420 - B_{\bar{N}}(2N + 418)) + B_{\bar{N}}(2N + 420 - B_{\bar{N}}(2N + 417)) \\
&= B_{\bar{N}}(2N + 420 - (3N + 60)) + B_{\bar{N}}(2N + 420 - (2N + 421)) + B_{\bar{N}}(2N + 420 - 421) \\
&= B_{\bar{N}}(-N + 360) + B_{\bar{N}}(-1) + B_{\bar{N}}(2N - 1) = 0 + 0 + (N + 5) = \mathbf{N} + \mathbf{5} \\
&(N \geq 360)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 421) &= B_{\bar{N}}(2N + 421 - B_{\bar{N}}(2N + 420)) + B_{\bar{N}}(2N + 421 - B_{\bar{N}}(2N + 419)) + B_{\bar{N}}(2N + 421 - B_{\bar{N}}(2N + 418)) \\
&= B_{\bar{N}}(2N + 421 - (N + 5)) + B_{\bar{N}}(2N + 421 - (3N + 60)) + B_{\bar{N}}(2N + 421 - (2N + 421)) \\
&= B_{\bar{N}}(N + 416) + B_{\bar{N}}(-N + 361) + B_{\bar{N}}(0) = 7 + 0 + 0 = \mathbf{7} \\
&(N \geq 361)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 422) &= B_{\bar{N}}(2N + 422 - B_{\bar{N}}(2N + 421)) + B_{\bar{N}}(2N + 422 - B_{\bar{N}}(2N + 420)) + B_{\bar{N}}(2N + 422 - B_{\bar{N}}(2N + 419)) \\
&= B_{\bar{N}}(2N + 422 - 7) + B_{\bar{N}}(2N + 422 - (N + 5)) + B_{\bar{N}}(2N + 422 - (3N + 60)) \\
&= B_{\bar{N}}(2N + 415) + B_{\bar{N}}(N + 417) + B_{\bar{N}}(-N + 362) = (2N + 51) + (2N + 163) + 0 = \mathbf{4N} + \mathbf{214} \\
&(N \geq 362)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 423) &= B_{\bar{N}}(2N + 423 - B_{\bar{N}}(2N + 422)) + B_{\bar{N}}(2N + 423 - B_{\bar{N}}(2N + 421)) + B_{\bar{N}}(2N + 423 - B_{\bar{N}}(2N + 420)) \\
&= B_{\bar{N}}(2N + 423 - (4N + 214)) + B_{\bar{N}}(2N + 423 - 7) + B_{\bar{N}}(2N + 423 - (N + 5)) \\
&= B_{\bar{N}}(-2N + 209) + B_{\bar{N}}(2N + 416) + B_{\bar{N}}(N + 418) = 0 + 365 + (2N + 52) = \mathbf{2N} + \mathbf{417} \\
&(N \geq 105)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 424) &= B_{\bar{N}}(2N + 424 - B_{\bar{N}}(2N + 423)) + B_{\bar{N}}(2N + 424 - B_{\bar{N}}(2N + 422)) + B_{\bar{N}}(2N + 424 - B_{\bar{N}}(2N + 421)) \\
&= B_{\bar{N}}(2N + 424 - (2N + 417)) + B_{\bar{N}}(2N + 424 - (4N + 214)) + B_{\bar{N}}(2N + 424 - 7) \\
&= B_{\bar{N}}(7) + B_{\bar{N}}(-2N + 210) + B_{\bar{N}}(2N + 417) = 7 + 0 + 421 = \mathbf{428} \\
&(N \geq 105)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 425) &= B_{\bar{N}}(2N + 425 - B_{\bar{N}}(2N + 424)) + B_{\bar{N}}(2N + 425 - B_{\bar{N}}(2N + 423)) + B_{\bar{N}}(2N + 425 - B_{\bar{N}}(2N + 422)) \\
&= B_{\bar{N}}(2N + 425 - 428) + B_{\bar{N}}(2N + 425 - (2N + 417)) + B_{\bar{N}}(2N + 425 - (4N + 214)) \\
&= B_{\bar{N}}(2N - 3) + B_{\bar{N}}(8) + B_{\bar{N}}(-2N + 211) = (N - 2) + 8 + 0 = \mathbf{N} + \mathbf{6} \\
&(N \geq 106)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 426) &= B_{\bar{N}}(2N + 426 - B_{\bar{N}}(2N + 425)) + B_{\bar{N}}(2N + 426 - B_{\bar{N}}(2N + 424)) + B_{\bar{N}}(2N + 426 - B_{\bar{N}}(2N + 423)) \\
&= B_{\bar{N}}(2N + 426 - (N + 6)) + B_{\bar{N}}(2N + 426 - 428) + B_{\bar{N}}(2N + 426 - (2N + 417)) \\
&= B_{\bar{N}}(N + 420) + B_{\bar{N}}(2N - 2) + B_{\bar{N}}(9) = 422 + N + 9 = \mathbf{N} + 431 \\
&(N \geq 69)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 427) &= B_{\bar{N}}(2N + 427 - B_{\bar{N}}(2N + 426)) + B_{\bar{N}}(2N + 427 - B_{\bar{N}}(2N + 425)) + B_{\bar{N}}(2N + 427 - B_{\bar{N}}(2N + 424)) \\
&= B_{\bar{N}}(2N + 427 - (N + 431)) + B_{\bar{N}}(2N + 427 - (N + 6)) + B_{\bar{N}}(2N + 427 - 428) \\
&= B_{\bar{N}}(N - 4) + B_{\bar{N}}(N + 421) + B_{\bar{N}}(2N - 1) = (N - 4) + (N + 422) + (N + 5) = 3\mathbf{N} + 423 \\
&(N \geq 5)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 428) &= B_{\bar{N}}(2N + 428 - B_{\bar{N}}(2N + 427)) + B_{\bar{N}}(2N + 428 - B_{\bar{N}}(2N + 426)) + B_{\bar{N}}(2N + 428 - B_{\bar{N}}(2N + 425)) \\
&= B_{\bar{N}}(2N + 428 - (3N + 423)) + B_{\bar{N}}(2N + 428 - (N + 431)) + B_{\bar{N}}(2N + 428 - (N + 6)) \\
&= B_{\bar{N}}(-N + 5) + B_{\bar{N}}(N - 3) + B_{\bar{N}}(N + 422) = 0 + (N - 3) + (N + 424) = 2\mathbf{N} + 421 \\
&(N \geq 5)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 429) &= B_{\bar{N}}(2N + 429 - B_{\bar{N}}(2N + 428)) + B_{\bar{N}}(2N + 429 - B_{\bar{N}}(2N + 427)) + B_{\bar{N}}(2N + 429 - B_{\bar{N}}(2N + 426)) \\
&= B_{\bar{N}}(2N + 429 - (2N + 421)) + B_{\bar{N}}(2N + 429 - (3N + 423)) + B_{\bar{N}}(2N + 429 - (N + 431)) \\
&= B_{\bar{N}}(8) + B_{\bar{N}}(-N + 6) + B_{\bar{N}}(N - 2) = 8 + 0 + (N - 2) = \mathbf{N} + 6 \\
&(N \geq 8)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 430) &= B_{\bar{N}}(2N + 430 - B_{\bar{N}}(2N + 429)) + B_{\bar{N}}(2N + 430 - B_{\bar{N}}(2N + 428)) + B_{\bar{N}}(2N + 430 - B_{\bar{N}}(2N + 427)) \\
&= B_{\bar{N}}(2N + 430 - (N + 6)) + B_{\bar{N}}(2N + 430 - (2N + 421)) + B_{\bar{N}}(2N + 430 - (3N + 423)) \\
&= B_{\bar{N}}(N + 424) + B_{\bar{N}}(9) + B_{\bar{N}}(-N + 7) = (2N + 165) + 9 + 0 = 2\mathbf{N} + 174 \\
&(N \geq 9)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 431) &= B_{\bar{N}}(2N + 431 - B_{\bar{N}}(2N + 430)) + B_{\bar{N}}(2N + 431 - B_{\bar{N}}(2N + 429)) + B_{\bar{N}}(2N + 431 - B_{\bar{N}}(2N + 428)) \\
&= B_{\bar{N}}(2N + 431 - (2N + 174)) + B_{\bar{N}}(2N + 431 - (N + 6)) + B_{\bar{N}}(2N + 431 - (2N + 421)) \\
&= B_{\bar{N}}(257) + B_{\bar{N}}(N + 425) + B_{\bar{N}}(10) = 257 + (2N + 53) + 10 = \mathbf{2N} + \mathbf{320} \\
&(N \geq 257)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 432) &= B_{\bar{N}}(2N + 432 - B_{\bar{N}}(2N + 431)) + B_{\bar{N}}(2N + 432 - B_{\bar{N}}(2N + 430)) + B_{\bar{N}}(2N + 432 - B_{\bar{N}}(2N + 429)) \\
&= B_{\bar{N}}(2N + 432 - (2N + 320)) + B_{\bar{N}}(2N + 432 - (2N + 174)) + B_{\bar{N}}(2N + 432 - (N + 6)) \\
&= B_{\bar{N}}(112) + B_{\bar{N}}(258) + B_{\bar{N}}(N + 426) = 112 + 258 + (N - 2) = \mathbf{N} + \mathbf{368} \\
&(N \geq 258)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 433) &= B_{\bar{N}}(2N + 433 - B_{\bar{N}}(2N + 432)) + B_{\bar{N}}(2N + 433 - B_{\bar{N}}(2N + 431)) + B_{\bar{N}}(2N + 433 - B_{\bar{N}}(2N + 430)) \\
&= B_{\bar{N}}(2N + 433 - (N + 368)) + B_{\bar{N}}(2N + 433 - (2N + 320)) + B_{\bar{N}}(2N + 433 - (2N + 174)) \\
&= B_{\bar{N}}(N + 65) + B_{\bar{N}}(113) + B_{\bar{N}}(259) = 61 + 113 + 259 = \mathbf{433} \\
&(N \geq 259)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 434) &= B_{\bar{N}}(2N + 434 - B_{\bar{N}}(2N + 433)) + B_{\bar{N}}(2N + 434 - B_{\bar{N}}(2N + 432)) + B_{\bar{N}}(2N + 434 - B_{\bar{N}}(2N + 431)) \\
&= B_{\bar{N}}(2N + 434 - 433) + B_{\bar{N}}(2N + 434 - (N + 368)) + B_{\bar{N}}(2N + 434 - (2N + 320)) \\
&= B_{\bar{N}}(2N + 1) + B_{\bar{N}}(N + 66) + B_{\bar{N}}(114) = (N + 2) + 71 + 114 = \mathbf{N} + \mathbf{187} \\
&(N \geq 114)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 435) &= B_{\bar{N}}(2N + 435 - B_{\bar{N}}(2N + 434)) + B_{\bar{N}}(2N + 435 - B_{\bar{N}}(2N + 433)) + B_{\bar{N}}(2N + 435 - B_{\bar{N}}(2N + 432)) \\
&= B_{\bar{N}}(2N + 435 - (N + 187)) + B_{\bar{N}}(2N + 435 - 433) + B_{\bar{N}}(2N + 435 - (N + 368)) \\
&= B_{\bar{N}}(N + 248) + B_{\bar{N}}(2N + 2) + B_{\bar{N}}(N + 67) = 7 + (2N - 3) + (2N + 63) = \mathbf{4N} + \mathbf{67} \\
&(N \geq 1)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 436) &= B_{\bar{N}}(2N + 436 - B_{\bar{N}}(2N + 435)) + B_{\bar{N}}(2N + 436 - B_{\bar{N}}(2N + 434)) + B_{\bar{N}}(2N + 436 - B_{\bar{N}}(2N + 433)) \\
&= B_{\bar{N}}(2N + 436 - (4N + 67)) + B_{\bar{N}}(2N + 436 - (N + 187)) + B_{\bar{N}}(2N + 436 - 433) \\
&= B_{\bar{N}}(-2N + 369) + B_{\bar{N}}(N + 249) + B_{\bar{N}}(2N + 3) = 0 + (2N + 115) + 12 = \mathbf{2N} + \mathbf{127} \\
&(N \geq 185)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 437) &= B_{\bar{N}}(2N + 437 - B_{\bar{N}}(2N + 436)) + B_{\bar{N}}(2N + 437 - B_{\bar{N}}(2N + 435)) + B_{\bar{N}}(2N + 437 - B_{\bar{N}}(2N + 434)) \\
&= B_{\bar{N}}(2N + 437 - (2N + 127)) + B_{\bar{N}}(2N + 437 - (4N + 67)) + B_{\bar{N}}(2N + 437 - (N + 187)) \\
&= B_{\bar{N}}(310) + B_{\bar{N}}(-2N + 370) + B_{\bar{N}}(N + 250) = 310 + 0 + (2N + 28) = \mathbf{2N} + \mathbf{338} \\
&(N \geq 310)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 438) &= B_{\bar{N}}(2N + 438 - B_{\bar{N}}(2N + 437)) + B_{\bar{N}}(2N + 438 - B_{\bar{N}}(2N + 436)) + B_{\bar{N}}(2N + 438 - B_{\bar{N}}(2N + 435)) \\
&= B_{\bar{N}}(2N + 438 - (2N + 338)) + B_{\bar{N}}(2N + 438 - (2N + 127)) + B_{\bar{N}}(2N + 438 - (4N + 67)) \\
&= B_{\bar{N}}(100) + B_{\bar{N}}(311) + B_{\bar{N}}(-2N + 371) = 100 + 311 + 0 = \mathbf{411} \\
&(N \geq 311)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 439) &= B_{\bar{N}}(2N + 439 - B_{\bar{N}}(2N + 438)) + B_{\bar{N}}(2N + 439 - B_{\bar{N}}(2N + 437)) + B_{\bar{N}}(2N + 439 - B_{\bar{N}}(2N + 436)) \\
&= B_{\bar{N}}(2N + 439 - 411) + B_{\bar{N}}(2N + 439 - (2N + 338)) + B_{\bar{N}}(2N + 439 - (2N + 127)) \\
&= B_{\bar{N}}(2N + 28) + B_{\bar{N}}(101) + B_{\bar{N}}(312) = (N + 24) + 101 + 312 = \mathbf{N} + \mathbf{437} \\
&(N \geq 312)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 440) &= B_{\bar{N}}(2N + 440 - B_{\bar{N}}(2N + 439)) + B_{\bar{N}}(2N + 440 - B_{\bar{N}}(2N + 438)) + B_{\bar{N}}(2N + 440 - B_{\bar{N}}(2N + 437)) \\
&= B_{\bar{N}}(2N + 440 - (N + 437)) + B_{\bar{N}}(2N + 440 - 411) + B_{\bar{N}}(2N + 440 - (2N + 338)) \\
&= B_{\bar{N}}(N + 3) + B_{\bar{N}}(2N + 29) + B_{\bar{N}}(102) = (N + 2) + 32 + 102 = \mathbf{N} + \mathbf{136} \\
&(N \geq 102)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 441) &= B_{\bar{N}}(2N + 441 - B_{\bar{N}}(2N + 440)) + B_{\bar{N}}(2N + 441 - B_{\bar{N}}(2N + 439)) + B_{\bar{N}}(2N + 441 - B_{\bar{N}}(2N + 438)) \\
&= B_{\bar{N}}(2N + 441 - (N + 136)) + B_{\bar{N}}(2N + 441 - (N + 437)) + B_{\bar{N}}(2N + 441 - 411) \\
&= B_{\bar{N}}(N + 305) + B_{\bar{N}}(N + 4) + B_{\bar{N}}(2N + 30) = (2N + 131) + (N + 3) + (2N + 11) = \mathbf{5N} + \mathbf{145} \\
&(N \geq 1)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 442) &= B_{\bar{N}}(2N + 442 - B_{\bar{N}}(2N + 441)) + B_{\bar{N}}(2N + 442 - B_{\bar{N}}(2N + 440)) + B_{\bar{N}}(2N + 442 - B_{\bar{N}}(2N + 439)) \\
&= B_{\bar{N}}(2N + 442 - (5N + 145)) + B_{\bar{N}}(2N + 442 - (N + 136)) + B_{\bar{N}}(2N + 442 - (N + 437)) \\
&= B_{\bar{N}}(-3N + 297) + B_{\bar{N}}(N + 306) + B_{\bar{N}}(N + 5) = 0 + (2N + 36) + 9 = \mathbf{2N} + \mathbf{45} \\
&(N \geq 99)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 443) &= B_{\bar{N}}(2N + 443 - B_{\bar{N}}(2N + 442)) + B_{\bar{N}}(2N + 443 - B_{\bar{N}}(2N + 441)) + B_{\bar{N}}(2N + 443 - B_{\bar{N}}(2N + 440)) \\
&= B_{\bar{N}}(2N + 443 - (2N + 45)) + B_{\bar{N}}(2N + 443 - (5N + 145)) + B_{\bar{N}}(2N + 443 - (N + 136)) \\
&= B_{\bar{N}}(398) + B_{\bar{N}}(-3N + 298) + B_{\bar{N}}(N + 307) = 398 + 0 + (N - 2) = \mathbf{N} + \mathbf{396} \\
&(N \geq 398)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 444) &= B_{\bar{N}}(2N + 444 - B_{\bar{N}}(2N + 443)) + B_{\bar{N}}(2N + 444 - B_{\bar{N}}(2N + 442)) + B_{\bar{N}}(2N + 444 - B_{\bar{N}}(2N + 441)) \\
&= B_{\bar{N}}(2N + 444 - (N + 396)) + B_{\bar{N}}(2N + 444 - (2N + 45)) + B_{\bar{N}}(2N + 444 - (5N + 145)) \\
&= B_{\bar{N}}(N + 48) + B_{\bar{N}}(399) + B_{\bar{N}}(-3N + 299) = (N + 39) + 399 + 0 = \mathbf{N} + \mathbf{438} \\
&(N \geq 399)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 445) &= B_{\bar{N}}(2N + 445 - B_{\bar{N}}(2N + 444)) + B_{\bar{N}}(2N + 445 - B_{\bar{N}}(2N + 443)) + B_{\bar{N}}(2N + 445 - B_{\bar{N}}(2N + 442)) \\
&= B_{\bar{N}}(2N + 445 - (N + 438)) + B_{\bar{N}}(2N + 445 - (N + 396)) + B_{\bar{N}}(2N + 445 - (2N + 45)) \\
&= B_{\bar{N}}(N + 7) + B_{\bar{N}}(N + 49) + B_{\bar{N}}(400) = (N + 5) + (N + 47) + 400 = \mathbf{2N} + \mathbf{452} \\
&(N \geq 400)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 446) &= B_{\bar{N}}(2N + 446 - B_{\bar{N}}(2N + 445)) + B_{\bar{N}}(2N + 446 - B_{\bar{N}}(2N + 444)) + B_{\bar{N}}(2N + 446 - B_{\bar{N}}(2N + 443)) \\
&= B_{\bar{N}}(2N + 446 - (2N + 452)) + B_{\bar{N}}(2N + 446 - (N + 438)) + B_{\bar{N}}(2N + 446 - (N + 396)) \\
&= B_{\bar{N}}(-6) + B_{\bar{N}}(N + 8) + B_{\bar{N}}(N + 50) = 0 + (N + 6) + (N + 27) = \mathbf{2N} + \mathbf{33} \\
&(N \geq 1)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 447) &= B_{\bar{N}}(2N + 447 - B_{\bar{N}}(2N + 446)) + B_{\bar{N}}(2N + 447 - B_{\bar{N}}(2N + 445)) + B_{\bar{N}}(2N + 447 - B_{\bar{N}}(2N + 444)) \\
&= B_{\bar{N}}(2N + 447 - (2N + 33)) + B_{\bar{N}}(2N + 447 - (2N + 452)) + B_{\bar{N}}(2N + 447 - (N + 438)) \\
&= B_{\bar{N}}(414) + B_{\bar{N}}(-5) + B_{\bar{N}}(N + 9) = 414 + 0 + 12 = \mathbf{426} \\
&(N \geq 414)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 448) &= B_{\bar{N}}(2N + 448 - B_{\bar{N}}(2N + 447)) + B_{\bar{N}}(2N + 448 - B_{\bar{N}}(2N + 446)) + B_{\bar{N}}(2N + 448 - B_{\bar{N}}(2N + 445)) \\
&= B_{\bar{N}}(2N + 448 - 426) + B_{\bar{N}}(2N + 448 - (2N + 33)) + B_{\bar{N}}(2N + 448 - (2N + 452)) \\
&= B_{\bar{N}}(2N + 22) + B_{\bar{N}}(415) + B_{\bar{N}}(-4) = (2N + 15) + 415 + 0 = \mathbf{2N} + \mathbf{430} \\
&(N \geq 415)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 449) &= B_{\bar{N}}(2N + 449 - B_{\bar{N}}(2N + 448)) + B_{\bar{N}}(2N + 449 - B_{\bar{N}}(2N + 447)) + B_{\bar{N}}(2N + 449 - B_{\bar{N}}(2N + 446)) \\
&= B_{\bar{N}}(2N + 449 - (2N + 430)) + B_{\bar{N}}(2N + 449 - 426) + B_{\bar{N}}(2N + 449 - (2N + 33)) \\
&= B_{\bar{N}}(19) + B_{\bar{N}}(2N + 23) + B_{\bar{N}}(416) = 19 + (3N + 10) + 416 = \mathbf{3N} + \mathbf{445} \\
&(N \geq 416)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 450) &= B_{\bar{N}}(2N + 450 - B_{\bar{N}}(2N + 449)) + B_{\bar{N}}(2N + 450 - B_{\bar{N}}(2N + 448)) + B_{\bar{N}}(2N + 450 - B_{\bar{N}}(2N + 447)) \\
&= B_{\bar{N}}(2N + 450 - (3N + 445)) + B_{\bar{N}}(2N + 450 - (2N + 430)) + B_{\bar{N}}(2N + 450 - 426) \\
&= B_{\bar{N}}(-N + 5) + B_{\bar{N}}(20) + B_{\bar{N}}(2N + 24) = 0 + 20 + 16 = \mathbf{36} \\
&(N \geq 20)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(\mathbf{2N} + \mathbf{451}) &= B_{\bar{N}}(2N + 451 - B_{\bar{N}}(2N + 450)) + B_{\bar{N}}(2N + 451 - B_{\bar{N}}(2N + 449)) + B_{\bar{N}}(2N + 451 - B_{\bar{N}}(2N + 448)) \\
&= B_{\bar{N}}(2N + 451 - 36) + B_{\bar{N}}(2N + 451 - (3N + 445)) + B_{\bar{N}}(2N + 451 - (2N + 430)) \\
&= B_{\bar{N}}(2N + 415) + B_{\bar{N}}(-N + 6) + B_{\bar{N}}(21) = (2N + 51) + 0 + 21 = \mathbf{2N} + \mathbf{72} \\
&(N \geq 21)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(\mathbf{2N} + \mathbf{452}) &= B_{\bar{N}}(2N + 452 - B_{\bar{N}}(2N + 451)) + B_{\bar{N}}(2N + 452 - B_{\bar{N}}(2N + 450)) + B_{\bar{N}}(2N + 452 - B_{\bar{N}}(2N + 449)) \\
&= B_{\bar{N}}(2N + 452 - (2N + 72)) + B_{\bar{N}}(2N + 452 - 36) + B_{\bar{N}}(2N + 452 - (3N + 445)) \\
&= B_{\bar{N}}(380) + B_{\bar{N}}(2N + 416) + B_{\bar{N}}(-N + 7) = 380 + 365 + 0 = \mathbf{745} \\
&(N \geq 380)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(\mathbf{2N} + \mathbf{453}) &= B_{\bar{N}}(2N + 453 - B_{\bar{N}}(2N + 452)) + B_{\bar{N}}(2N + 453 - B_{\bar{N}}(2N + 451)) + B_{\bar{N}}(2N + 453 - B_{\bar{N}}(2N + 450)) \\
&= B_{\bar{N}}(2N + 453 - 745) + B_{\bar{N}}(2N + 453 - (2N + 72)) + B_{\bar{N}}(2N + 453 - 36) \\
&= B_{\bar{N}}(2N - 292) + B_{\bar{N}}(381) + B_{\bar{N}}(2N + 417) = \left(\frac{16N}{7} - \frac{277}{7} \right) + 381 + 421 = \frac{\mathbf{16N}}{\mathbf{7}} + \frac{\mathbf{5337}}{\mathbf{7}} \\
&(N \geq 381)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(\mathbf{2N} + \mathbf{454}) &= B_{\bar{N}}(2N + 454 - B_{\bar{N}}(2N + 453)) + B_{\bar{N}}(2N + 454 - B_{\bar{N}}(2N + 452)) + B_{\bar{N}}(2N + 454 - B_{\bar{N}}(2N + 451)) \\
&= B_{\bar{N}}\left(2N + 454 - \left(\frac{16N}{7} + \frac{5337}{7}\right)\right) + B_{\bar{N}}(2N + 454 - 745) + B_{\bar{N}}(2N + 454 - (2N + 72)) \\
&= B_{\bar{N}}\left(-\frac{2N}{7} - \frac{2159}{7}\right) + B_{\bar{N}}(2N - 291) + B_{\bar{N}}(382) = 0 + \left(\frac{15N}{7} - \frac{345}{7}\right) + 382 = \frac{\mathbf{15N}}{\mathbf{7}} + \frac{\mathbf{2329}}{\mathbf{7}} \\
&(N \geq 382)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(\mathbf{2N} + \mathbf{455}) &= B_{\bar{N}}(2N + 455 - B_{\bar{N}}(2N + 454)) + B_{\bar{N}}(2N + 455 - B_{\bar{N}}(2N + 453)) + B_{\bar{N}}(2N + 455 - B_{\bar{N}}(2N + 452)) \\
&= B_{\bar{N}}\left(2N + 455 - \left(\frac{15N}{7} + \frac{2329}{7}\right)\right) + B_{\bar{N}}\left(2N + 455 - \left(\frac{16N}{7} + \frac{5337}{7}\right)\right) + B_{\bar{N}}(2N + 455 - 745) \\
&= B_{\bar{N}}\left(-\frac{N}{7} + \frac{856}{7}\right) + B_{\bar{N}}\left(-\frac{2N}{7} - \frac{2152}{7}\right) + B_{\bar{N}}(2N - 290) = 0 + 0 + (N - 2) = \mathbf{N} - \mathbf{2} \\
&(N \geq 856)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(\mathbf{2N} + \mathbf{456}) &= B_{\bar{N}}(2N + 456 - B_{\bar{N}}(2N + 455)) + B_{\bar{N}}(2N + 456 - B_{\bar{N}}(2N + 454)) + B_{\bar{N}}(2N + 456 - B_{\bar{N}}(2N + 453)) \\
&= B_{\bar{N}}(2N + 456 - (N - 2)) + B_{\bar{N}}\left(2N + 456 - \left(\frac{15N}{7} + \frac{2329}{7}\right)\right) + B_{\bar{N}}\left(2N + 456 - \left(\frac{16N}{7} + \frac{5337}{7}\right)\right) \\
&= B_{\bar{N}}(N + 458) + B_{\bar{N}}\left(-\frac{N}{7} + \frac{863}{7}\right) + B_{\bar{N}}\left(-\frac{2N}{7} - \frac{2145}{7}\right) = 7 + 0 + 0 = \mathbf{7} \\
&(N \geq 863)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(\mathbf{2N} + \mathbf{457}) &= B_{\bar{N}}(2N + 457 - B_{\bar{N}}(2N + 456)) + B_{\bar{N}}(2N + 457 - B_{\bar{N}}(2N + 455)) + B_{\bar{N}}(2N + 457 - B_{\bar{N}}(2N + 454)) \\
&= B_{\bar{N}}(2N + 457 - 7) + B_{\bar{N}}(2N + 457 - (N - 2)) + B_{\bar{N}}\left(2N + 457 - \left(\frac{15N}{7} + \frac{2329}{7}\right)\right) \\
&= B_{\bar{N}}(2N + 450) + B_{\bar{N}}(N + 459) + B_{\bar{N}}\left(-\frac{N}{7} + \frac{870}{7}\right) = 36 + (2N + 175) + 0 = \mathbf{2N} + \mathbf{211} \\
&(N \geq 870)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(\mathbf{2N} + \mathbf{458}) &= B_{\bar{N}}(2N + 458 - B_{\bar{N}}(2N + 457)) + B_{\bar{N}}(2N + 458 - B_{\bar{N}}(2N + 456)) + B_{\bar{N}}(2N + 458 - B_{\bar{N}}(2N + 455)) \\
&= B_{\bar{N}}(2N + 458 - (2N + 211)) + B_{\bar{N}}(2N + 458 - 7) + B_{\bar{N}}(2N + 458 - (N - 2)) \\
&= B_{\bar{N}}(247) + B_{\bar{N}}(2N + 451) + B_{\bar{N}}(N + 460) = 247 + (2N + 72) + (2N + 58) = \mathbf{4N} + \mathbf{377} \\
&(N \geq 247)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 459) &= B_{\bar{N}}(2N + 459 - B_{\bar{N}}(2N + 458)) + B_{\bar{N}}(2N + 459 - B_{\bar{N}}(2N + 457)) + B_{\bar{N}}(2N + 459 - B_{\bar{N}}(2N + 456)) \\
&= B_{\bar{N}}(2N + 459 - (4N + 377)) + B_{\bar{N}}(2N + 459 - (2N + 211)) + B_{\bar{N}}(2N + 459 - 7) \\
&= B_{\bar{N}}(-2N + 82) + B_{\bar{N}}(248) + B_{\bar{N}}(2N + 452) = 0 + 248 + 745 = \mathbf{993} \\
&(N \geq 248)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 460) &= B_{\bar{N}}(2N + 460 - B_{\bar{N}}(2N + 459)) + B_{\bar{N}}(2N + 460 - B_{\bar{N}}(2N + 458)) + B_{\bar{N}}(2N + 460 - B_{\bar{N}}(2N + 457)) \\
&= B_{\bar{N}}(2N + 460 - 993) + B_{\bar{N}}(2N + 460 - (4N + 377)) + B_{\bar{N}}(2N + 460 - (2N + 211)) \\
&= B_{\bar{N}}(2N - 533) + B_{\bar{N}}(-2N + 83) + B_{\bar{N}}(249) = (2N - 532) + 0 + 249 = \mathbf{2N - 283} \\
&(N \geq 600)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 461) &= B_{\bar{N}}(2N + 461 - B_{\bar{N}}(2N + 460)) + B_{\bar{N}}(2N + 461 - B_{\bar{N}}(2N + 459)) + B_{\bar{N}}(2N + 461 - B_{\bar{N}}(2N + 458)) \\
&= B_{\bar{N}}(2N + 461 - (2N - 283)) + B_{\bar{N}}(2N + 461 - 993) + B_{\bar{N}}(2N + 461 - (4N + 377)) \\
&= B_{\bar{N}}(744) + B_{\bar{N}}(2N - 532) + B_{\bar{N}}(-2N + 84) = 744 + (2N - 530) + 0 = \mathbf{2N + 214} \\
&(N \geq 744)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 462) &= B_{\bar{N}}(2N + 462 - B_{\bar{N}}(2N + 461)) + B_{\bar{N}}(2N + 462 - B_{\bar{N}}(2N + 460)) + B_{\bar{N}}(2N + 462 - B_{\bar{N}}(2N + 459)) \\
&= B_{\bar{N}}(2N + 462 - (2N + 214)) + B_{\bar{N}}(2N + 462 - (2N - 283)) + B_{\bar{N}}(2N + 462 - 993) \\
&= B_{\bar{N}}(248) + B_{\bar{N}}(745) + B_{\bar{N}}(2N - 531) = 248 + 745 + 7 = \mathbf{1000} \\
&(N \geq 745)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 463) &= B_{\bar{N}}(2N + 463 - B_{\bar{N}}(2N + 462)) + B_{\bar{N}}(2N + 463 - B_{\bar{N}}(2N + 461)) + B_{\bar{N}}(2N + 463 - B_{\bar{N}}(2N + 460)) \\
&= B_{\bar{N}}(2N + 463 - 1000) + B_{\bar{N}}(2N + 463 - (2N + 214)) + B_{\bar{N}}(2N + 463 - (2N - 283)) \\
&= B_{\bar{N}}(2N - 537) + B_{\bar{N}}(249) + B_{\bar{N}}(746) = \left(\frac{16N}{7} - \frac{767}{7} \right) + 249 + 746 = \frac{\mathbf{16N}}{\mathbf{7}} + \frac{\mathbf{6198}}{\mathbf{7}} \\
&(N \geq 746)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 464) &= B_{\bar{N}}(2N + 464 - B_{\bar{N}}(2N + 463)) + B_{\bar{N}}(2N + 464 - B_{\bar{N}}(2N + 462)) + B_{\bar{N}}(2N + 464 - B_{\bar{N}}(2N + 461)) \\
&= B_{\bar{N}}\left(2N + 464 - \left(\frac{16N}{7} + \frac{6198}{7}\right)\right) + B_{\bar{N}}(2N + 464 - 1000) + B_{\bar{N}}(2N + 464 - (2N + 214)) \\
&= B_{\bar{N}}\left(-\frac{2N}{7} - \frac{2950}{7}\right) + B_{\bar{N}}(2N - 536) + B_{\bar{N}}(250) = 0 + \left(\frac{15N}{7} - \frac{590}{7}\right) + 250 = \frac{15\mathbf{N}}{7} + \frac{1160}{7} \\
&(\mathbf{N} \geq 603)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 465) &= B_{\bar{N}}(2N + 465 - B_{\bar{N}}(2N + 464)) + B_{\bar{N}}(2N + 465 - B_{\bar{N}}(2N + 463)) + B_{\bar{N}}(2N + 465 - B_{\bar{N}}(2N + 462)) \\
&= B_{\bar{N}}\left(2N + 465 - \left(\frac{15N}{7} + \frac{1160}{7}\right)\right) + B_{\bar{N}}\left(2N + 465 - \left(\frac{16N}{7} + \frac{6198}{7}\right)\right) + B_{\bar{N}}(2N + 465 - 1000) \\
&= B_{\bar{N}}\left(-\frac{N}{7} + \frac{2095}{7}\right) + B_{\bar{N}}\left(-\frac{2N}{7} - \frac{2943}{7}\right) + B_{\bar{N}}(2N - 535) = 0 + 0 + (N - 2) = \mathbf{N} - 2 \\
&(\mathbf{N} \geq 2095)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 466) &= B_{\bar{N}}(2N + 466 - B_{\bar{N}}(2N + 465)) + B_{\bar{N}}(2N + 466 - B_{\bar{N}}(2N + 464)) + B_{\bar{N}}(2N + 466 - B_{\bar{N}}(2N + 463)) \\
&= B_{\bar{N}}(2N + 466 - (N - 2)) + B_{\bar{N}}\left(2N + 466 - \left(\frac{15N}{7} + \frac{1160}{7}\right)\right) + B_{\bar{N}}\left(2N + 466 - \left(\frac{16N}{7} + \frac{6198}{7}\right)\right) \\
&= B_{\bar{N}}(N + 468) + B_{\bar{N}}\left(-\frac{N}{7} + \frac{2102}{7}\right) + B_{\bar{N}}\left(-\frac{2N}{7} - \frac{2936}{7}\right) = (N - 2) + 0 + 0 = \mathbf{N} - 2 \\
&(\mathbf{N} \geq 2102)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 467) &= B_{\bar{N}}(2N + 467 - B_{\bar{N}}(2N + 466)) + B_{\bar{N}}(2N + 467 - B_{\bar{N}}(2N + 465)) + B_{\bar{N}}(2N + 467 - B_{\bar{N}}(2N + 464)) \\
&= B_{\bar{N}}(2N + 467 - (N - 2)) + B_{\bar{N}}(2N + 467 - (N - 2)) + B_{\bar{N}}\left(2N + 467 - \left(\frac{15N}{7} + \frac{1160}{7}\right)\right) \\
&= B_{\bar{N}}(N + 469) + B_{\bar{N}}(N + 469) + B_{\bar{N}}\left(-\frac{N}{7} + \frac{2109}{7}\right) = 471 + 471 + 0 = \mathbf{942} \\
&(\mathbf{N} \geq 2109)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(\mathbf{2N} + \mathbf{468}) &= B_{\bar{N}}(2N + 468 - B_{\bar{N}}(2N + 467)) + B_{\bar{N}}(2N + 468 - B_{\bar{N}}(2N + 466)) + B_{\bar{N}}(2N + 468 - B_{\bar{N}}(2N + 465)) \\
&= B_{\bar{N}}(2N + 468 - 942) + B_{\bar{N}}(2N + 468 - (N - 2)) + B_{\bar{N}}(2N + 468 - (N - 2)) \\
&= B_{\bar{N}}(2N - 474) + B_{\bar{N}}(N + 470) + B_{\bar{N}}(N + 470) = \left(\frac{16N}{7} - \frac{641}{7}\right) + (N + 471) + (N + 471) = \frac{30N}{7} + \frac{5953}{7} \\
&(N \geq 541)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(\mathbf{2N} + \mathbf{469}) &= B_{\bar{N}}(2N + 469 - B_{\bar{N}}(2N + 468)) + B_{\bar{N}}(2N + 469 - B_{\bar{N}}(2N + 467)) + B_{\bar{N}}(2N + 469 - B_{\bar{N}}(2N + 466)) \\
&= B_{\bar{N}}\left(2N + 469 - \left(\frac{30N}{7} + \frac{5953}{7}\right)\right) + B_{\bar{N}}(2N + 469 - 942) + B_{\bar{N}}(2N + 469 - (N - 2)) \\
&= B_{\bar{N}}\left(-\frac{16N}{7} - \frac{2670}{7}\right) + B_{\bar{N}}(2N - 473) + B_{\bar{N}}(N + 471) = 0 + \left(\frac{15N}{7} - \frac{527}{7}\right) + (N + 473) = \frac{22N}{7} + \frac{2784}{7} \\
&(N \geq 540)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(\mathbf{2N} + \mathbf{470}) &= B_{\bar{N}}(2N + 470 - B_{\bar{N}}(2N + 469)) + B_{\bar{N}}(2N + 470 - B_{\bar{N}}(2N + 468)) + B_{\bar{N}}(2N + 470 - B_{\bar{N}}(2N + 467)) \\
&= B_{\bar{N}}\left(2N + 470 - \left(\frac{22N}{7} + \frac{2784}{7}\right)\right) + B_{\bar{N}}\left(2N + 470 - \left(\frac{30N}{7} + \frac{5953}{7}\right)\right) + B_{\bar{N}}(2N + 470 - 942) \\
&= B_{\bar{N}}\left(-\frac{8N}{7} + \frac{506}{7}\right) + B_{\bar{N}}\left(-\frac{16N}{7} - \frac{2663}{7}\right) + B_{\bar{N}}(2N - 472) = 0 + 0 + (N - 2) = \mathbf{N} - \mathbf{2} \\
&(N \geq 539)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(\mathbf{2N} + \mathbf{471}) &= B_{\bar{N}}(2N + 471 - B_{\bar{N}}(2N + 470)) + B_{\bar{N}}(2N + 471 - B_{\bar{N}}(2N + 469)) + B_{\bar{N}}(2N + 471 - B_{\bar{N}}(2N + 468)) \\
&= B_{\bar{N}}(2N + 471 - (N - 2)) + B_{\bar{N}}\left(2N + 471 - \left(\frac{22N}{7} + \frac{2784}{7}\right)\right) + B_{\bar{N}}\left(2N + 471 - \left(\frac{30N}{7} + \frac{5953}{7}\right)\right) \\
&= B_{\bar{N}}(N + 473) + B_{\bar{N}}\left(-\frac{8N}{7} + \frac{513}{7}\right) + B_{\bar{N}}\left(-\frac{16N}{7} - \frac{2656}{7}\right) = (2N + 179) + 0 + 0 = \mathbf{2N} + \mathbf{179} \\
&(N \geq 65)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 472) &= B_{\bar{N}}(2N + 472 - B_{\bar{N}}(2N + 471)) + B_{\bar{N}}(2N + 472 - B_{\bar{N}}(2N + 470)) + B_{\bar{N}}(2N + 472 - B_{\bar{N}}(2N + 469)) \\
&= B_{\bar{N}}(2N + 472 - (2N + 179)) + B_{\bar{N}}(2N + 472 - (N - 2)) + B_{\bar{N}}\left(2N + 472 - \left(\frac{22N}{7} + \frac{2784}{7}\right)\right) \\
&= B_{\bar{N}}(293) + B_{\bar{N}}(N + 474) + B_{\bar{N}}\left(-\frac{8N}{7} + \frac{520}{7}\right) = 293 + (2N + 60) + 0 = \mathbf{2N} + \mathbf{353} \\
&(N \geq 293)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 473) &= B_{\bar{N}}(2N + 473 - B_{\bar{N}}(2N + 472)) + B_{\bar{N}}(2N + 473 - B_{\bar{N}}(2N + 471)) + B_{\bar{N}}(2N + 473 - B_{\bar{N}}(2N + 470)) \\
&= B_{\bar{N}}(2N + 473 - (2N + 353)) + B_{\bar{N}}(2N + 473 - (2N + 179)) + B_{\bar{N}}(2N + 473 - (N - 2)) \\
&= B_{\bar{N}}(120) + B_{\bar{N}}(294) + B_{\bar{N}}(N + 475) = 120 + 294 + (N - 2) = \mathbf{N} + \mathbf{412} \\
&(N \geq 294)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 474) &= B_{\bar{N}}(2N + 474 - B_{\bar{N}}(2N + 473)) + B_{\bar{N}}(2N + 474 - B_{\bar{N}}(2N + 472)) + B_{\bar{N}}(2N + 474 - B_{\bar{N}}(2N + 471)) \\
&= B_{\bar{N}}(2N + 474 - (N + 412)) + B_{\bar{N}}(2N + 474 - (2N + 353)) + B_{\bar{N}}(2N + 474 - (2N + 179)) \\
&= B_{\bar{N}}(N + 62) + B_{\bar{N}}(121) + B_{\bar{N}}(295) = (4N + 51) + 121 + 295 = \mathbf{4N} + \mathbf{467} \\
&(N \geq 295)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 475) &= B_{\bar{N}}(2N + 475 - B_{\bar{N}}(2N + 474)) + B_{\bar{N}}(2N + 475 - B_{\bar{N}}(2N + 473)) + B_{\bar{N}}(2N + 475 - B_{\bar{N}}(2N + 472)) \\
&= B_{\bar{N}}(2N + 475 - (4N + 467)) + B_{\bar{N}}(2N + 475 - (N + 412)) + B_{\bar{N}}(2N + 475 - (2N + 353)) \\
&= B_{\bar{N}}(-2N + 8) + B_{\bar{N}}(N + 63) + B_{\bar{N}}(122) = 0 + (2N + 14) + 122 = \mathbf{2N} + \mathbf{136} \\
&(N \geq 122)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 476) &= B_{\bar{N}}(2N + 476 - B_{\bar{N}}(2N + 475)) + B_{\bar{N}}(2N + 476 - B_{\bar{N}}(2N + 474)) + B_{\bar{N}}(2N + 476 - B_{\bar{N}}(2N + 473)) \\
&= B_{\bar{N}}(2N + 476 - (2N + 136)) + B_{\bar{N}}(2N + 476 - (4N + 467)) + B_{\bar{N}}(2N + 476 - (N + 412)) \\
&= B_{\bar{N}}(340) + B_{\bar{N}}(-2N + 9) + B_{\bar{N}}(N + 64) = 340 + 0 + (N + 4) = \mathbf{N} + \mathbf{344} \\
&(N \geq 340)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 477) &= B_{\bar{N}}(2N + 477 - B_{\bar{N}}(2N + 476)) + B_{\bar{N}}(2N + 477 - B_{\bar{N}}(2N + 475)) + B_{\bar{N}}(2N + 477 - B_{\bar{N}}(2N + 474)) \\
&= B_{\bar{N}}(2N + 477 - (N + 344)) + B_{\bar{N}}(2N + 477 - (2N + 136)) + B_{\bar{N}}(2N + 477 - (4N + 467)) \\
&= B_{\bar{N}}(N + 133) + B_{\bar{N}}(341) + B_{\bar{N}}(-2N + 10) = 135 + 341 + 0 = \mathbf{476} \\
&(N \geq 341)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 478) &= B_{\bar{N}}(2N + 478 - B_{\bar{N}}(2N + 477)) + B_{\bar{N}}(2N + 478 - B_{\bar{N}}(2N + 476)) + B_{\bar{N}}(2N + 478 - B_{\bar{N}}(2N + 475)) \\
&= B_{\bar{N}}(2N + 478 - 476) + B_{\bar{N}}(2N + 478 - (N + 344)) + B_{\bar{N}}(2N + 478 - (2N + 136)) \\
&= B_{\bar{N}}(2N + 2) + B_{\bar{N}}(N + 134) + B_{\bar{N}}(342) = (2N - 3) + (N + 135) + 342 = \mathbf{3N} + \mathbf{474} \\
&(N \geq 342)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 479) &= B_{\bar{N}}(2N + 479 - B_{\bar{N}}(2N + 478)) + B_{\bar{N}}(2N + 479 - B_{\bar{N}}(2N + 477)) + B_{\bar{N}}(2N + 479 - B_{\bar{N}}(2N + 476)) \\
&= B_{\bar{N}}(2N + 479 - (3N + 474)) + B_{\bar{N}}(2N + 479 - 476) + B_{\bar{N}}(2N + 479 - (N + 344)) \\
&= B_{\bar{N}}(-N + 5) + B_{\bar{N}}(2N + 3) + B_{\bar{N}}(N + 135) = 0 + 12 + (N + 137) = \mathbf{N} + \mathbf{149} \\
&(N \geq 5)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 480) &= B_{\bar{N}}(2N + 480 - B_{\bar{N}}(2N + 479)) + B_{\bar{N}}(2N + 480 - B_{\bar{N}}(2N + 478)) + B_{\bar{N}}(2N + 480 - B_{\bar{N}}(2N + 477)) \\
&= B_{\bar{N}}(2N + 480 - (N + 149)) + B_{\bar{N}}(2N + 480 - (3N + 474)) + B_{\bar{N}}(2N + 480 - 476) \\
&= B_{\bar{N}}(N + 331) + B_{\bar{N}}(-N + 6) + B_{\bar{N}}(2N + 4) = (N + 333) + 0 + (3N + 1) = \mathbf{4N} + \mathbf{334} \\
&(N \geq 6)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 481) &= B_{\bar{N}}(2N + 481 - B_{\bar{N}}(2N + 480)) + B_{\bar{N}}(2N + 481 - B_{\bar{N}}(2N + 479)) + B_{\bar{N}}(2N + 481 - B_{\bar{N}}(2N + 478)) \\
&= B_{\bar{N}}(2N + 481 - (4N + 334)) + B_{\bar{N}}(2N + 481 - (N + 149)) + B_{\bar{N}}(2N + 481 - (3N + 474)) \\
&= B_{\bar{N}}(-2N + 147) + B_{\bar{N}}(N + 332) + B_{\bar{N}}(-N + 7) = 0 + 7 + 0 = \mathbf{7} \\
&(N \geq 74)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 482) &= B_{\bar{N}}(2N + 482 - B_{\bar{N}}(2N + 481)) + B_{\bar{N}}(2N + 482 - B_{\bar{N}}(2N + 480)) + B_{\bar{N}}(2N + 482 - B_{\bar{N}}(2N + 479)) \\
&= B_{\bar{N}}(2N + 482 - 7) + B_{\bar{N}}(2N + 482 - (4N + 334)) + B_{\bar{N}}(2N + 482 - (N + 149)) \\
&= B_{\bar{N}}(2N + 475) + B_{\bar{N}}(-2N + 148) + B_{\bar{N}}(N + 333) = (2N + 136) + 0 + (2N + 139) = \mathbf{4N} + \mathbf{275} \\
&(N \geq 74)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 483) &= B_{\bar{N}}(2N + 483 - B_{\bar{N}}(2N + 482)) + B_{\bar{N}}(2N + 483 - B_{\bar{N}}(2N + 481)) + B_{\bar{N}}(2N + 483 - B_{\bar{N}}(2N + 480)) \\
&= B_{\bar{N}}(2N + 483 - (4N + 275)) + B_{\bar{N}}(2N + 483 - 7) + B_{\bar{N}}(2N + 483 - (4N + 334)) \\
&= B_{\bar{N}}(-2N + 208) + B_{\bar{N}}(2N + 476) + B_{\bar{N}}(-2N + 149) = 0 + (N + 344) + 0 = \mathbf{N} + \mathbf{344} \\
&(N \geq 104)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 484) &= B_{\bar{N}}(2N + 484 - B_{\bar{N}}(2N + 483)) + B_{\bar{N}}(2N + 484 - B_{\bar{N}}(2N + 482)) + B_{\bar{N}}(2N + 484 - B_{\bar{N}}(2N + 481)) \\
&= B_{\bar{N}}(2N + 484 - (N + 344)) + B_{\bar{N}}(2N + 484 - (4N + 275)) + B_{\bar{N}}(2N + 484 - 7) \\
&= B_{\bar{N}}(N + 140) + B_{\bar{N}}(-2N + 209) + B_{\bar{N}}(2N + 477) = 142 + 0 + 476 = \mathbf{618} \\
&(N \geq 105)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 485) &= B_{\bar{N}}(2N + 485 - B_{\bar{N}}(2N + 484)) + B_{\bar{N}}(2N + 485 - B_{\bar{N}}(2N + 483)) + B_{\bar{N}}(2N + 485 - B_{\bar{N}}(2N + 482)) \\
&= B_{\bar{N}}(2N + 485 - 618) + B_{\bar{N}}(2N + 485 - (N + 344)) + B_{\bar{N}}(2N + 485 - (4N + 275)) \\
&= B_{\bar{N}}(2N - 133) + B_{\bar{N}}(N + 141) + B_{\bar{N}}(-2N + 210) = (2N - 131) + (N + 142) + 0 = \mathbf{3N} + \mathbf{11} \\
&(N \geq 200)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 486) &= B_{\bar{N}}(2N + 486 - B_{\bar{N}}(2N + 485)) + B_{\bar{N}}(2N + 486 - B_{\bar{N}}(2N + 484)) + B_{\bar{N}}(2N + 486 - B_{\bar{N}}(2N + 483)) \\
&= B_{\bar{N}}(2N + 486 - (3N + 11)) + B_{\bar{N}}(2N + 486 - 618) + B_{\bar{N}}(2N + 486 - (N + 344)) \\
&= B_{\bar{N}}(-N + 475) + B_{\bar{N}}(2N - 132) + B_{\bar{N}}(N + 142) = 0 + 7 + (N + 144) = \mathbf{N} + \mathbf{151} \\
&(N \geq 475)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 487) &= B_{\bar{N}}(2N + 487 - B_{\bar{N}}(2N + 486)) + B_{\bar{N}}(2N + 487 - B_{\bar{N}}(2N + 485)) + B_{\bar{N}}(2N + 487 - B_{\bar{N}}(2N + 484)) \\
&= B_{\bar{N}}(2N + 487 - (N + 151)) + B_{\bar{N}}(2N + 487 - (3N + 11)) + B_{\bar{N}}(2N + 487 - 618) \\
&= B_{\bar{N}}(N + 336) + B_{\bar{N}}(-N + 476) + B_{\bar{N}}(2N - 131) = 338 + 0 + \left(\frac{16N}{7} + \frac{45}{7}\right) = \frac{16\mathbf{N}}{7} + \frac{2411}{7} \\
&(N \geq 476)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 488) &= B_{\bar{N}}(2N + 488 - B_{\bar{N}}(2N + 487)) + B_{\bar{N}}(2N + 488 - B_{\bar{N}}(2N + 486)) + B_{\bar{N}}(2N + 488 - B_{\bar{N}}(2N + 485)) \\
&= B_{\bar{N}}\left(2N + 488 - \left(\frac{16N}{7} + \frac{2411}{7}\right)\right) + B_{\bar{N}}(2N + 488 - (N + 151)) + B_{\bar{N}}(2N + 488 - (3N + 11)) \\
&= B_{\bar{N}}\left(-\frac{2N}{7} + \frac{1005}{7}\right) + B_{\bar{N}}(N + 337) + B_{\bar{N}}(-N + 477) = 0 + (N + 338) + 0 = \mathbf{N} + 338 \\
&(N \geq 503)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 489) &= B_{\bar{N}}(2N + 489 - B_{\bar{N}}(2N + 488)) + B_{\bar{N}}(2N + 489 - B_{\bar{N}}(2N + 487)) + B_{\bar{N}}(2N + 489 - B_{\bar{N}}(2N + 486)) \\
&= B_{\bar{N}}(2N + 489 - (N + 338)) + B_{\bar{N}}\left(2N + 489 - \left(\frac{16N}{7} + \frac{2411}{7}\right)\right) + B_{\bar{N}}(2N + 489 - (N + 151)) \\
&= B_{\bar{N}}(N + 151) + B_{\bar{N}}\left(-\frac{2N}{7} + \frac{1012}{7}\right) + B_{\bar{N}}(N + 338) = (2N + 87) + 0 + (N + 340) = 3\mathbf{N} + 427 \\
&(N \geq 506)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 490) &= B_{\bar{N}}(2N + 490 - B_{\bar{N}}(2N + 489)) + B_{\bar{N}}(2N + 490 - B_{\bar{N}}(2N + 488)) + B_{\bar{N}}(2N + 490 - B_{\bar{N}}(2N + 487)) \\
&= B_{\bar{N}}(2N + 490 - (3N + 427)) + B_{\bar{N}}(2N + 490 - (N + 338)) + B_{\bar{N}}\left(2N + 490 - \left(\frac{16N}{7} + \frac{2411}{7}\right)\right) \\
&= B_{\bar{N}}(-N + 63) + B_{\bar{N}}(N + 152) + B_{\bar{N}}\left(-\frac{2N}{7} + \frac{1019}{7}\right) = 0 + (2N + 14) + 0 = 2\mathbf{N} + 14 \\
&(N \geq 510)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 491) &= B_{\bar{N}}(2N + 491 - B_{\bar{N}}(2N + 490)) + B_{\bar{N}}(2N + 491 - B_{\bar{N}}(2N + 489)) + B_{\bar{N}}(2N + 491 - B_{\bar{N}}(2N + 488)) \\
&= B_{\bar{N}}(2N + 491 - (2N + 14)) + B_{\bar{N}}(2N + 491 - (3N + 427)) + B_{\bar{N}}(2N + 491 - (N + 338)) \\
&= B_{\bar{N}}(477) + B_{\bar{N}}(-N + 64) + B_{\bar{N}}(N + 153) = 477 + 0 + (N - 2) = \mathbf{N} + 475 \\
&(N \geq 477)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 492) &= B_{\bar{N}}(2N + 492 - B_{\bar{N}}(2N + 491)) + B_{\bar{N}}(2N + 492 - B_{\bar{N}}(2N + 490)) + B_{\bar{N}}(2N + 492 - B_{\bar{N}}(2N + 489)) \\
&= B_{\bar{N}}(2N + 492 - (N + 475)) + B_{\bar{N}}(2N + 492 - (2N + 14)) + B_{\bar{N}}(2N + 492 - (3N + 427)) \\
&= B_{\bar{N}}(N + 17) + B_{\bar{N}}(478) + B_{\bar{N}}(-N + 65) = (N + 13) + 478 + 0 = \mathbf{N} + 491 \\
&(N \geq 478)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 493) &= B_{\bar{N}}(2N + 493 - B_{\bar{N}}(2N + 492)) + B_{\bar{N}}(2N + 493 - B_{\bar{N}}(2N + 491)) + B_{\bar{N}}(2N + 493 - B_{\bar{N}}(2N + 490)) \\
&= B_{\bar{N}}(2N + 493 - (N + 491)) + B_{\bar{N}}(2N + 493 - (N + 475)) + B_{\bar{N}}(2N + 493 - (2N + 14)) \\
&= B_{\bar{N}}(N + 2) + B_{\bar{N}}(N + 18) + B_{\bar{N}}(479) = (N + 1) + 18 + 479 = \mathbf{N} + 498 \\
&(N \geq 479)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 494) &= B_{\bar{N}}(2N + 494 - B_{\bar{N}}(2N + 493)) + B_{\bar{N}}(2N + 494 - B_{\bar{N}}(2N + 492)) + B_{\bar{N}}(2N + 494 - B_{\bar{N}}(2N + 491)) \\
&= B_{\bar{N}}(2N + 494 - (N + 498)) + B_{\bar{N}}(2N + 494 - (N + 491)) + B_{\bar{N}}(2N + 494 - (N + 475)) \\
&= B_{\bar{N}}(N - 4) + B_{\bar{N}}(N + 3) + B_{\bar{N}}(N + 19) = (N - 4) + (N + 2) + (N + 13) = 3\mathbf{N} + 11 \\
&(N \geq 5)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 495) &= B_{\bar{N}}(2N + 495 - B_{\bar{N}}(2N + 494)) + B_{\bar{N}}(2N + 495 - B_{\bar{N}}(2N + 493)) + B_{\bar{N}}(2N + 495 - B_{\bar{N}}(2N + 492)) \\
&= B_{\bar{N}}(2N + 495 - (3N + 11)) + B_{\bar{N}}(2N + 495 - (N + 498)) + B_{\bar{N}}(2N + 495 - (N + 491)) \\
&= B_{\bar{N}}(-N + 484) + B_{\bar{N}}(N - 3) + B_{\bar{N}}(N + 4) = 0 + (N - 3) + (N + 3) = 2\mathbf{N} \\
&(N \geq 484)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 496) &= B_{\bar{N}}(2N + 496 - B_{\bar{N}}(2N + 495)) + B_{\bar{N}}(2N + 496 - B_{\bar{N}}(2N + 494)) + B_{\bar{N}}(2N + 496 - B_{\bar{N}}(2N + 493)) \\
&= B_{\bar{N}}(2N + 496 - 2N) + B_{\bar{N}}(2N + 496 - (3N + 11)) + B_{\bar{N}}(2N + 496 - (N + 498)) \\
&= B_{\bar{N}}(496) + B_{\bar{N}}(-N + 485) + B_{\bar{N}}(N - 2) = 496 + 0 + (N - 2) = \mathbf{N} + 494 \\
&(N \geq 496)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 497) &= B_{\bar{N}}(2N + 497 - B_{\bar{N}}(2N + 496)) + B_{\bar{N}}(2N + 497 - B_{\bar{N}}(2N + 495)) + B_{\bar{N}}(2N + 497 - B_{\bar{N}}(2N + 494)) \\
&= B_{\bar{N}}(2N + 497 - (N + 494)) + B_{\bar{N}}(2N + 497 - 2N) + B_{\bar{N}}(2N + 497 - (3N + 11)) \\
&= B_{\bar{N}}(N + 3) + B_{\bar{N}}(497) + B_{\bar{N}}(-N + 486) = (N + 2) + 497 + 0 = \mathbf{N} + 499 \\
&(N \geq 497)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 498) &= B_{\bar{N}}(2N + 498 - B_{\bar{N}}(2N + 497)) + B_{\bar{N}}(2N + 498 - B_{\bar{N}}(2N + 496)) + B_{\bar{N}}(2N + 498 - B_{\bar{N}}(2N + 495)) \\
&= B_{\bar{N}}(2N + 498 - (N + 499)) + B_{\bar{N}}(2N + 498 - (N + 494)) + B_{\bar{N}}(2N + 498 - 2N) \\
&= B_{\bar{N}}(N - 1) + B_{\bar{N}}(N + 4) + B_{\bar{N}}(498) = (N - 1) + (N + 3) + 498 = 2\mathbf{N} + 500 \\
&(N \geq 498)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 499) &= B_{\bar{N}}(2N + 499 - B_{\bar{N}}(2N + 498)) + B_{\bar{N}}(2N + 499 - B_{\bar{N}}(2N + 497)) + B_{\bar{N}}(2N + 499 - B_{\bar{N}}(2N + 496)) \\
&= B_{\bar{N}}(2N + 499 - (2N + 500)) + B_{\bar{N}}(2N + 499 - (N + 499)) + B_{\bar{N}}(2N + 499 - (N + 494)) \\
&= B_{\bar{N}}(-1) + B_{\bar{N}}(N) + B_{\bar{N}}(N + 5) = 0 + N + 9 = \mathbf{N} + 9 \\
&(N \geq 1)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 500) &= B_{\bar{N}}(2N + 500 - B_{\bar{N}}(2N + 499)) + B_{\bar{N}}(2N + 500 - B_{\bar{N}}(2N + 498)) + B_{\bar{N}}(2N + 500 - B_{\bar{N}}(2N + 497)) \\
&= B_{\bar{N}}(2N + 500 - (N + 9)) + B_{\bar{N}}(2N + 500 - (2N + 500)) + B_{\bar{N}}(2N + 500 - (N + 499)) \\
&= B_{\bar{N}}(N + 491) + B_{\bar{N}}(0) + B_{\bar{N}}(N + 1) = (N + 492) + 0 + 6 = \mathbf{N} + 498 \\
&(N \geq 1)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 501) &= B_{\bar{N}}(2N + 501 - B_{\bar{N}}(2N + 500)) + B_{\bar{N}}(2N + 501 - B_{\bar{N}}(2N + 499)) + B_{\bar{N}}(2N + 501 - B_{\bar{N}}(2N + 498)) \\
&= B_{\bar{N}}(2N + 501 - (N + 498)) + B_{\bar{N}}(2N + 501 - (N + 9)) + B_{\bar{N}}(2N + 501 - (2N + 500)) \\
&= B_{\bar{N}}(N + 3) + B_{\bar{N}}(N + 492) + B_{\bar{N}}(1) = (N + 2) + (N + 494) + 1 = \mathbf{2N} + \mathbf{497} \\
&(N \geq 1)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 502) &= B_{\bar{N}}(2N + 502 - B_{\bar{N}}(2N + 501)) + B_{\bar{N}}(2N + 502 - B_{\bar{N}}(2N + 500)) + B_{\bar{N}}(2N + 502 - B_{\bar{N}}(2N + 499)) \\
&= B_{\bar{N}}(2N + 502 - (2N + 497)) + B_{\bar{N}}(2N + 502 - (N + 498)) + B_{\bar{N}}(2N + 502 - (N + 9)) \\
&= B_{\bar{N}}(5) + B_{\bar{N}}(N + 4) + B_{\bar{N}}(N + 493) = 5 + (N + 3) + 7 = \mathbf{N} + \mathbf{15} \\
&(N \geq 5)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 503) &= B_{\bar{N}}(2N + 503 - B_{\bar{N}}(2N + 502)) + B_{\bar{N}}(2N + 503 - B_{\bar{N}}(2N + 501)) + B_{\bar{N}}(2N + 503 - B_{\bar{N}}(2N + 500)) \\
&= B_{\bar{N}}(2N + 503 - (N + 15)) + B_{\bar{N}}(2N + 503 - (2N + 497)) + B_{\bar{N}}(2N + 503 - (N + 498)) \\
&= B_{\bar{N}}(N + 488) + B_{\bar{N}}(6) + B_{\bar{N}}(N + 5) = (2N + 62) + 6 + 9 = \mathbf{2N} + \mathbf{77} \\
&(N \geq 6)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 504) &= B_{\bar{N}}(2N + 504 - B_{\bar{N}}(2N + 503)) + B_{\bar{N}}(2N + 504 - B_{\bar{N}}(2N + 502)) + B_{\bar{N}}(2N + 504 - B_{\bar{N}}(2N + 501)) \\
&= B_{\bar{N}}(2N + 504 - (2N + 77)) + B_{\bar{N}}(2N + 504 - (N + 15)) + B_{\bar{N}}(2N + 504 - (2N + 497)) \\
&= B_{\bar{N}}(427) + B_{\bar{N}}(N + 489) + B_{\bar{N}}(7) = 427 + (N - 2) + 7 = \mathbf{N} + \mathbf{432} \\
&(N \geq 427)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 505) &= B_{\bar{N}}(2N + 505 - B_{\bar{N}}(2N + 504)) + B_{\bar{N}}(2N + 505 - B_{\bar{N}}(2N + 503)) + B_{\bar{N}}(2N + 505 - B_{\bar{N}}(2N + 502)) \\
&= B_{\bar{N}}(2N + 505 - (N + 432)) + B_{\bar{N}}(2N + 505 - (2N + 77)) + B_{\bar{N}}(2N + 505 - (N + 15)) \\
&= B_{\bar{N}}(N + 73) + B_{\bar{N}}(428) + B_{\bar{N}}(N + 490) = 7 + 428 + 492 = \mathbf{927} \\
&(N \geq 428)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 506) &= B_{\bar{N}}(2N + 506 - B_{\bar{N}}(2N + 505)) + B_{\bar{N}}(2N + 506 - B_{\bar{N}}(2N + 504)) + B_{\bar{N}}(2N + 506 - B_{\bar{N}}(2N + 503)) \\
&= B_{\bar{N}}(2N + 506 - 927) + B_{\bar{N}}(2N + 506 - (N + 432)) + B_{\bar{N}}(2N + 506 - (2N + 77)) \\
&= B_{\bar{N}}(2N - 421) + B_{\bar{N}}(N + 74) + B_{\bar{N}}(429) = (2N - 420) + (2N + 65) + 429 = \mathbf{4N} + \mathbf{74} \\
&(N \geq 488)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 507) &= B_{\bar{N}}(2N + 507 - B_{\bar{N}}(2N + 506)) + B_{\bar{N}}(2N + 507 - B_{\bar{N}}(2N + 505)) + B_{\bar{N}}(2N + 507 - B_{\bar{N}}(2N + 504)) \\
&= B_{\bar{N}}(2N + 507 - (4N + 74)) + B_{\bar{N}}(2N + 507 - 927) + B_{\bar{N}}(2N + 507 - (N + 432)) \\
&= B_{\bar{N}}(-2N + 433) + B_{\bar{N}}(2N - 420) + B_{\bar{N}}(N + 75) = 0 + (2N - 418) + (2N + 3) = \mathbf{4N} - \mathbf{415} \\
&(N \geq 487)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 508) &= B_{\bar{N}}(2N + 508 - B_{\bar{N}}(2N + 507)) + B_{\bar{N}}(2N + 508 - B_{\bar{N}}(2N + 506)) + B_{\bar{N}}(2N + 508 - B_{\bar{N}}(2N + 505)) \\
&= B_{\bar{N}}(2N + 508 - (4N - 415)) + B_{\bar{N}}(2N + 508 - (4N + 74)) + B_{\bar{N}}(2N + 508 - 927) \\
&= B_{\bar{N}}(-2N + 923) + B_{\bar{N}}(-2N + 434) + B_{\bar{N}}(2N - 419) = 0 + 0 + 7 = \mathbf{7} \\
&(N \geq 486)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 509) &= B_{\bar{N}}(2N + 509 - B_{\bar{N}}(2N + 508)) + B_{\bar{N}}(2N + 509 - B_{\bar{N}}(2N + 507)) + B_{\bar{N}}(2N + 509 - B_{\bar{N}}(2N + 506)) \\
&= B_{\bar{N}}(2N + 509 - 7) + B_{\bar{N}}(2N + 509 - (4N - 415)) + B_{\bar{N}}(2N + 509 - (4N + 74)) \\
&= B_{\bar{N}}(2N + 502) + B_{\bar{N}}(-2N + 924) + B_{\bar{N}}(-2N + 435) = (N + 15) + 0 + 0 = \mathbf{N} + \mathbf{15} \\
&(N \geq 462)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 510) &= B_{\bar{N}}(2N + 510 - B_{\bar{N}}(2N + 509)) + B_{\bar{N}}(2N + 510 - B_{\bar{N}}(2N + 508)) + B_{\bar{N}}(2N + 510 - B_{\bar{N}}(2N + 507)) \\
&= B_{\bar{N}}(2N + 510 - (N + 15)) + B_{\bar{N}}(2N + 510 - 7) + B_{\bar{N}}(2N + 510 - (4N - 415)) \\
&= B_{\bar{N}}(N + 495) + B_{\bar{N}}(2N + 503) + B_{\bar{N}}(-2N + 925) = (2N + 63) + (2N + 77) + 0 = \mathbf{4N} + \mathbf{140} \\
&(N \geq 463)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 511) &= B_{\bar{N}}(2N + 511 - B_{\bar{N}}(2N + 510)) + B_{\bar{N}}(2N + 511 - B_{\bar{N}}(2N + 509)) + B_{\bar{N}}(2N + 511 - B_{\bar{N}}(2N + 508)) \\
&= B_{\bar{N}}(2N + 511 - (4N + 140)) + B_{\bar{N}}(2N + 511 - (N + 15)) + B_{\bar{N}}(2N + 511 - 7) \\
&= B_{\bar{N}}(-2N + 371) + B_{\bar{N}}(N + 496) + B_{\bar{N}}(2N + 504) = 0 + (N - 2) + (N + 432) = \mathbf{2N} + \mathbf{430} \\
&(N \geq 186)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 512) &= B_{\bar{N}}(2N + 512 - B_{\bar{N}}(2N + 511)) + B_{\bar{N}}(2N + 512 - B_{\bar{N}}(2N + 510)) + B_{\bar{N}}(2N + 512 - B_{\bar{N}}(2N + 509)) \\
&= B_{\bar{N}}(2N + 512 - (2N + 430)) + B_{\bar{N}}(2N + 512 - (4N + 140)) + B_{\bar{N}}(2N + 512 - (N + 15)) \\
&= B_{\bar{N}}(82) + B_{\bar{N}}(-2N + 372) + B_{\bar{N}}(N + 497) = 82 + 0 + 499 = \mathbf{581} \\
&(N \geq 186)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 513) &= B_{\bar{N}}(2N + 513 - B_{\bar{N}}(2N + 512)) + B_{\bar{N}}(2N + 513 - B_{\bar{N}}(2N + 511)) + B_{\bar{N}}(2N + 513 - B_{\bar{N}}(2N + 510)) \\
&= B_{\bar{N}}(2N + 513 - 581) + B_{\bar{N}}(2N + 513 - (2N + 430)) + B_{\bar{N}}(2N + 513 - (4N + 140)) \\
&= B_{\bar{N}}(2N - 68) + B_{\bar{N}}(83) + B_{\bar{N}}(-2N + 373) = \left(\frac{16N}{7} + \frac{171}{7} \right) + 83 + 0 = \frac{\mathbf{16N}}{\mathbf{7}} + \frac{\mathbf{752}}{\mathbf{7}} \\
&(N \geq 187)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 514) &= B_{\bar{N}}(2N + 514 - B_{\bar{N}}(2N + 513)) + B_{\bar{N}}(2N + 514 - B_{\bar{N}}(2N + 512)) + B_{\bar{N}}(2N + 514 - B_{\bar{N}}(2N + 511)) \\
&= B_{\bar{N}}\left(2N + 514 - \left(\frac{16N}{7} + \frac{752}{7}\right)\right) + B_{\bar{N}}(2N + 514 - 581) + B_{\bar{N}}(2N + 514 - (2N + 430)) \\
&= B_{\bar{N}}\left(-\frac{2N}{7} + \frac{2846}{7}\right) + B_{\bar{N}}(2N - 67) + B_{\bar{N}}(84) = 0 + \left(\frac{15N}{7} - \frac{121}{7}\right) + 84 = \frac{\mathbf{15N}}{\mathbf{7}} + \frac{\mathbf{467}}{\mathbf{7}} \\
&(N \geq 1423)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 515) &= B_{\bar{N}}(2N + 515 - B_{\bar{N}}(2N + 514)) + B_{\bar{N}}(2N + 515 - B_{\bar{N}}(2N + 513)) + B_{\bar{N}}(2N + 515 - B_{\bar{N}}(2N + 512)) \\
&= B_{\bar{N}}\left(2N + 515 - \left(\frac{15N}{7} + \frac{467}{7}\right)\right) + B_{\bar{N}}\left(2N + 515 - \left(\frac{16N}{7} + \frac{752}{7}\right)\right) + B_{\bar{N}}(2N + 515 - 581) \\
&= B_{\bar{N}}\left(-\frac{N}{7} + \frac{3138}{7}\right) + B_{\bar{N}}\left(-\frac{2N}{7} + \frac{2853}{7}\right) + B_{\bar{N}}(2N - 66) = 0 + 0 + (N - 2) = \mathbf{N} - \mathbf{2} \\
&(\mathbf{N} \geq \mathbf{3138})
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 516) &= B_{\bar{N}}(2N + 516 - B_{\bar{N}}(2N + 515)) + B_{\bar{N}}(2N + 516 - B_{\bar{N}}(2N + 514)) + B_{\bar{N}}(2N + 516 - B_{\bar{N}}(2N + 513)) \\
&= B_{\bar{N}}(2N + 516 - (N - 2)) + B_{\bar{N}}\left(2N + 516 - \left(\frac{15N}{7} + \frac{467}{7}\right)\right) + B_{\bar{N}}\left(2N + 516 - \left(\frac{16N}{7} + \frac{752}{7}\right)\right) \\
&= B_{\bar{N}}(N + 518) + B_{\bar{N}}\left(-\frac{N}{7} + \frac{3145}{7}\right) + B_{\bar{N}}\left(-\frac{2N}{7} + \frac{2860}{7}\right) = 520 + 0 + 0 = \mathbf{520} \\
&(\mathbf{N} \geq \mathbf{3145})
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 517) &= B_{\bar{N}}(2N + 517 - B_{\bar{N}}(2N + 516)) + B_{\bar{N}}(2N + 517 - B_{\bar{N}}(2N + 515)) + B_{\bar{N}}(2N + 517 - B_{\bar{N}}(2N + 514)) \\
&= B_{\bar{N}}(2N + 517 - 520) + B_{\bar{N}}(2N + 517 - (N - 2)) + B_{\bar{N}}\left(2N + 517 - \left(\frac{15N}{7} + \frac{467}{7}\right)\right) \\
&= B_{\bar{N}}(2N - 3) + B_{\bar{N}}(N + 519) + B_{\bar{N}}\left(-\frac{N}{7} + \frac{3152}{7}\right) = (N - 2) + (N + 520) + 0 = \mathbf{2N} + \mathbf{518} \\
&(\mathbf{N} \geq \mathbf{3152})
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 518) &= B_{\bar{N}}(2N + 518 - B_{\bar{N}}(2N + 517)) + B_{\bar{N}}(2N + 518 - B_{\bar{N}}(2N + 516)) + B_{\bar{N}}(2N + 518 - B_{\bar{N}}(2N + 515)) \\
&= B_{\bar{N}}(2N + 518 - (2N + 518)) + B_{\bar{N}}(2N + 518 - 520) + B_{\bar{N}}(2N + 518 - (N - 2)) \\
&= B_{\bar{N}}(0) + B_{\bar{N}}(2N - 2) + B_{\bar{N}}(N + 520) = 0 + N + (N + 522) = \mathbf{2N} + \mathbf{522} \\
&(N \geq 69)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(\mathbf{2N} + \mathbf{519}) &= B_{\bar{N}}(2N + 519 - B_{\bar{N}}(2N + 518)) + B_{\bar{N}}(2N + 519 - B_{\bar{N}}(2N + 517)) + B_{\bar{N}}(2N + 519 - B_{\bar{N}}(2N + 516)) \\
&= B_{\bar{N}}(2N + 519 - (2N + 522)) + B_{\bar{N}}(2N + 519 - (2N + 518)) + B_{\bar{N}}(2N + 519 - 520) \\
&= B_{\bar{N}}(-3) + B_{\bar{N}}(1) + B_{\bar{N}}(2N - 1) = 0 + 1 + (N + 5) = \mathbf{N} + \mathbf{6} \\
&(N \geq 1)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(\mathbf{2N} + \mathbf{520}) &= B_{\bar{N}}(2N + 520 - B_{\bar{N}}(2N + 519)) + B_{\bar{N}}(2N + 520 - B_{\bar{N}}(2N + 518)) + B_{\bar{N}}(2N + 520 - B_{\bar{N}}(2N + 517)) \\
&= B_{\bar{N}}(2N + 520 - (N + 6)) + B_{\bar{N}}(2N + 520 - (2N + 522)) + B_{\bar{N}}(2N + 520 - (2N + 518)) \\
&= B_{\bar{N}}(N + 514) + B_{\bar{N}}(-2) + B_{\bar{N}}(2) = 7 + 0 + 2 = \mathbf{9} \\
&(N \geq 2)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(\mathbf{2N} + \mathbf{521}) &= B_{\bar{N}}(2N + 521 - B_{\bar{N}}(2N + 520)) + B_{\bar{N}}(2N + 521 - B_{\bar{N}}(2N + 519)) + B_{\bar{N}}(2N + 521 - B_{\bar{N}}(2N + 518)) \\
&= B_{\bar{N}}(2N + 521 - 9) + B_{\bar{N}}(2N + 521 - (N + 6)) + B_{\bar{N}}(2N + 521 - (2N + 522)) \\
&= B_{\bar{N}}(2N + 512) + B_{\bar{N}}(N + 515) + B_{\bar{N}}(-1) = 581 + (2N + 191) + 0 = \mathbf{2N} + \mathbf{772} \\
&(N \geq 1)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(\mathbf{2N} + \mathbf{522}) &= B_{\bar{N}}(2N + 522 - B_{\bar{N}}(2N + 521)) + B_{\bar{N}}(2N + 522 - B_{\bar{N}}(2N + 520)) + B_{\bar{N}}(2N + 522 - B_{\bar{N}}(2N + 519)) \\
&= B_{\bar{N}}(2N + 522 - (2N + 772)) + B_{\bar{N}}(2N + 522 - 9) + B_{\bar{N}}(2N + 522 - (N + 6)) \\
&= B_{\bar{N}}(-250) + B_{\bar{N}}(2N + 513) + B_{\bar{N}}(N + 516) = 0 + \left(\frac{16N}{7} + \frac{752}{7} \right) + (2N + 66) = \frac{\mathbf{30N}}{\mathbf{7}} + \frac{\mathbf{1214}}{\mathbf{7}} \\
&(N \geq 1)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(\mathbf{2N} + \mathbf{523}) &= B_{\bar{N}}(2N + 523 - B_{\bar{N}}(2N + 522)) + B_{\bar{N}}(2N + 523 - B_{\bar{N}}(2N + 521)) + B_{\bar{N}}(2N + 523 - B_{\bar{N}}(2N + 520)) \\
&= B_{\bar{N}}\left(2N + 523 - \left(\frac{30N}{7} + \frac{1214}{7}\right)\right) + B_{\bar{N}}(2N + 523 - (2N + 772)) + B_{\bar{N}}(2N + 523 - 9) \\
&= B_{\bar{N}}\left(-\frac{16N}{7} + \frac{2447}{7}\right) + B_{\bar{N}}(-249) + B_{\bar{N}}(2N + 514) = 0 + 0 + \left(\frac{15N}{7} + \frac{467}{7}\right) = \frac{\mathbf{15N}}{\mathbf{7}} + \frac{\mathbf{467}}{\mathbf{7}} \\
&(N \geq 153)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{\mathbf{N}}}(\mathbf{2N} + \mathbf{524}) &= B_{\bar{N}}(2N + 524 - B_{\bar{N}}(2N + 523)) + B_{\bar{N}}(2N + 524 - B_{\bar{N}}(2N + 522)) + B_{\bar{N}}(2N + 524 - B_{\bar{N}}(2N + 521)) \\
&= B_{\bar{N}}\left(2N + 524 - \left(\frac{15N}{7} + \frac{467}{7}\right)\right) + B_{\bar{N}}\left(2N + 524 - \left(\frac{30N}{7} + \frac{1214}{7}\right)\right) + B_{\bar{N}}(2N + 524 - (2N + 772)) \\
&= B_{\bar{N}}\left(-\frac{N}{7} + \frac{3201}{7}\right) + B_{\bar{N}}\left(-\frac{16N}{7} + \frac{2454}{7}\right) + B_{\bar{N}}(-248) = 0 + 0 + 0 = \mathbf{0} \\
&(\mathbf{N} \geq \mathbf{3201})
\end{aligned}$$