

## Terms $B_{\bar{N}}(2N - 1)$ through $B_{\bar{N}}(2N + 254)$ when $N \equiv 1 \pmod{7}$

When  $N \equiv 1 \pmod{7}$  and  $N \geq 72$ , a pattern with 7 interleaved linear sequences lasts from index  $N + 67$  through  $2N - 2$ . If  $N \geq 2087$ , there are 256 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.

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(\mathbf{2N} - \mathbf{1}) &= B_{\bar{N}}(2N - 1 - B_{\bar{N}}(2N - 2)) + B_{\bar{N}}(2N - 1 - B_{\bar{N}}(2N - 3)) + B_{\bar{N}}(2N - 1 - B_{\bar{N}}(2N - 4)) \\
&= B_{\bar{N}}(2N - 1 - (N - 2)) + B_{\bar{N}}\left(2N - 1 - \left(\frac{15N}{7} - \frac{57}{7}\right)\right) + B_{\bar{N}}\left(2N - 1 - \left(\frac{16N}{7} + \frac{299}{7}\right)\right) \\
&= B_{\bar{N}}(N + 1) + B_{\bar{N}}\left(-\frac{N}{7} + \frac{50}{7}\right) + B_{\bar{N}}\left(-\frac{2N}{7} - \frac{306}{7}\right) = 6 + 0 + 0 = \mathbf{6} \\
&(N \geq 71)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(\mathbf{2N}) &= B_{\bar{N}}(2N - B_{\bar{N}}(2N - 1)) + B_{\bar{N}}(2N - B_{\bar{N}}(2N - 2)) + B_{\bar{N}}(2N - B_{\bar{N}}(2N - 3)) \\
&= B_{\bar{N}}(2N - 6) + B_{\bar{N}}(2N - (N - 2)) + B_{\bar{N}}\left(2N - \left(\frac{15N}{7} - \frac{57}{7}\right)\right) \\
&= B_{\bar{N}}(2N - 6) + B_{\bar{N}}(N + 2) + B_{\bar{N}}\left(-\frac{N}{7} + \frac{57}{7}\right) = (2N - 4) + (N + 1) + 0 = \mathbf{3N} - \mathbf{3} \\
&(\mathbf{N} \geq \mathbf{73})
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(\mathbf{2N} + \mathbf{1}) &= B_{\bar{N}}(2N + 1 - B_{\bar{N}}(2N)) + B_{\bar{N}}(2N + 1 - B_{\bar{N}}(2N - 1)) + B_{\bar{N}}(2N + 1 - B_{\bar{N}}(2N - 2)) \\
&= B_{\bar{N}}(2N + 1 - (3N - 3)) + B_{\bar{N}}(2N + 1 - 6) + B_{\bar{N}}(2N + 1 - (N - 2)) \\
&= B_{\bar{N}}(-N + 4) + B_{\bar{N}}(2N - 5) + B_{\bar{N}}(N + 3) = 0 + 7 + (N + 2) = \mathbf{N} + \mathbf{9} \\
&(N \geq 72)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(\mathbf{2N} + \mathbf{2}) &= B_{\bar{N}}(2N + 2 - B_{\bar{N}}(2N + 1)) + B_{\bar{N}}(2N + 2 - B_{\bar{N}}(2N)) + B_{\bar{N}}(2N + 2 - B_{\bar{N}}(2N - 1)) \\
&= B_{\bar{N}}(2N + 2 - (N + 9)) + B_{\bar{N}}(2N + 2 - (3N - 3)) + B_{\bar{N}}(2N + 2 - 6) \\
&= B_{\bar{N}}(N - 7) + B_{\bar{N}}(-N + 5) + B_{\bar{N}}(2N - 4) = (N - 7) + 0 + \left( \frac{16N}{7} + \frac{299}{7} \right) = \frac{\mathbf{23N}}{\mathbf{7}} + \frac{\mathbf{250}}{\mathbf{7}} \\
&(N \geq 71)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(\mathbf{2N} + \mathbf{3}) &= B_{\bar{N}}(2N + 3 - B_{\bar{N}}(2N + 2)) + B_{\bar{N}}(2N + 3 - B_{\bar{N}}(2N + 1)) + B_{\bar{N}}(2N + 3 - B_{\bar{N}}(2N)) \\
&= B_{\bar{N}}\left(2N + 3 - \left(\frac{23N}{7} + \frac{250}{7}\right)\right) + B_{\bar{N}}(2N + 3 - (N + 9)) + B_{\bar{N}}(2N + 3 - (3N - 3)) \\
&= B_{\bar{N}}\left(-\frac{9N}{7} - \frac{229}{7}\right) + B_{\bar{N}}(N - 6) + B_{\bar{N}}(-N + 6) = 0 + (N - 6) + 0 = \mathbf{N} - \mathbf{6} \\
&(N \geq 7)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(\mathbf{2N} + \mathbf{4}) &= B_{\bar{N}}(2N + 4 - B_{\bar{N}}(2N + 3)) + B_{\bar{N}}(2N + 4 - B_{\bar{N}}(2N + 2)) + B_{\bar{N}}(2N + 4 - B_{\bar{N}}(2N + 1)) \\
&= B_{\bar{N}}(2N + 4 - (N - 6)) + B_{\bar{N}}\left(2N + 4 - \left(\frac{23N}{7} + \frac{250}{7}\right)\right) + B_{\bar{N}}(2N + 4 - (N + 9)) \\
&= B_{\bar{N}}(N + 10) + B_{\bar{N}}\left(-\frac{9N}{7} - \frac{222}{7}\right) + B_{\bar{N}}(N - 5) = (N + 7) + 0 + (N - 5) = \mathbf{2N} + \mathbf{2} \\
&(N \geq 8)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(\mathbf{2N} + \mathbf{5}) &= B_{\bar{N}}(2N + 5 - B_{\bar{N}}(2N + 4)) + B_{\bar{N}}(2N + 5 - B_{\bar{N}}(2N + 3)) + B_{\bar{N}}(2N + 5 - B_{\bar{N}}(2N + 2)) \\
&= B_{\bar{N}}(2N + 5 - (2N + 2)) + B_{\bar{N}}(2N + 5 - (N - 6)) + B_{\bar{N}}\left(2N + 5 - \left(\frac{23N}{7} + \frac{250}{7}\right)\right) \\
&= B_{\bar{N}}(3) + B_{\bar{N}}(N + 11) + B_{\bar{N}}\left(-\frac{9N}{7} - \frac{215}{7}\right) = 3 + (N + 8) + 0 = \mathbf{N} + \mathbf{11} \\
&(N \geq 9)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 6) &= B_{\bar{N}}(2N + 6 - B_{\bar{N}}(2N + 5)) + B_{\bar{N}}(2N + 6 - B_{\bar{N}}(2N + 4)) + B_{\bar{N}}(2N + 6 - B_{\bar{N}}(2N + 3)) \\
&= B_{\bar{N}}(2N + 6 - (N + 11)) + B_{\bar{N}}(2N + 6 - (2N + 2)) + B_{\bar{N}}(2N + 6 - (N - 6)) \\
&= B_{\bar{N}}(N - 5) + B_{\bar{N}}(4) + B_{\bar{N}}(N + 12) = (N - 5) + 4 + (N + 9) = \mathbf{2N} + \mathbf{8} \\
&(N \geq 10)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 7) &= B_{\bar{N}}(2N + 7 - B_{\bar{N}}(2N + 6)) + B_{\bar{N}}(2N + 7 - B_{\bar{N}}(2N + 5)) + B_{\bar{N}}(2N + 7 - B_{\bar{N}}(2N + 4)) \\
&= B_{\bar{N}}(2N + 7 - (2N + 8)) + B_{\bar{N}}(2N + 7 - (N + 11)) + B_{\bar{N}}(2N + 7 - (2N + 2)) \\
&= B_{\bar{N}}(-1) + B_{\bar{N}}(N - 4) + B_{\bar{N}}(5) = 0 + (N - 4) + 5 = \mathbf{N} + \mathbf{1} \\
&(\mathbf{N} \geq \mathbf{77})
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 8) &= B_{\bar{N}}(2N + 8 - B_{\bar{N}}(2N + 7)) + B_{\bar{N}}(2N + 8 - B_{\bar{N}}(2N + 6)) + B_{\bar{N}}(2N + 8 - B_{\bar{N}}(2N + 5)) \\
&= B_{\bar{N}}(2N + 8 - (N + 1)) + B_{\bar{N}}(2N + 8 - (2N + 8)) + B_{\bar{N}}(2N + 8 - (N + 11)) \\
&= B_{\bar{N}}(N + 7) + B_{\bar{N}}(0) + B_{\bar{N}}(N - 3) = (N + 5) + 0 + (N - 3) = \mathbf{2N} + \mathbf{2} \\
&(N \geq 76)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 9) &= B_{\bar{N}}(2N + 9 - B_{\bar{N}}(2N + 8)) + B_{\bar{N}}(2N + 9 - B_{\bar{N}}(2N + 7)) + B_{\bar{N}}(2N + 9 - B_{\bar{N}}(2N + 6)) \\
&= B_{\bar{N}}(2N + 9 - (2N + 2)) + B_{\bar{N}}(2N + 9 - (N + 1)) + B_{\bar{N}}(2N + 9 - (2N + 8)) \\
&= B_{\bar{N}}(7) + B_{\bar{N}}(N + 8) + B_{\bar{N}}(1) = 7 + (N + 6) + 1 = \mathbf{N} + \mathbf{14} \\
&(\mathbf{N} \geq \mathbf{105})
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 10) &= B_{\bar{N}}(2N + 10 - B_{\bar{N}}(2N + 9)) + B_{\bar{N}}(2N + 10 - B_{\bar{N}}(2N + 8)) + B_{\bar{N}}(2N + 10 - B_{\bar{N}}(2N + 7)) \\
&= B_{\bar{N}}(2N + 10 - (N + 14)) + B_{\bar{N}}(2N + 10 - (2N + 2)) + B_{\bar{N}}(2N + 10 - (N + 1)) \\
&= B_{\bar{N}}(N - 4) + B_{\bar{N}}(8) + B_{\bar{N}}(N + 9) = (N - 4) + 8 + 12 = \mathbf{N} + \mathbf{16} \\
&(\mathbf{N} \geq \mathbf{112})
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 11) &= B_{\bar{N}}(2N + 11 - B_{\bar{N}}(2N + 10)) + B_{\bar{N}}(2N + 11 - B_{\bar{N}}(2N + 9)) + B_{\bar{N}}(2N + 11 - B_{\bar{N}}(2N + 8)) \\
&= B_{\bar{N}}(2N + 11 - (N + 16)) + B_{\bar{N}}(2N + 11 - (N + 14)) + B_{\bar{N}}(2N + 11 - (2N + 2)) \\
&= B_{\bar{N}}(N - 5) + B_{\bar{N}}(N - 3) + B_{\bar{N}}(9) = (N - 5) + (N - 3) + 9 = \mathbf{2N} + \mathbf{1} \\
&(\mathbf{N} \geq \mathbf{119})
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 12) &= B_{\bar{N}}(2N + 12 - B_{\bar{N}}(2N + 11)) + B_{\bar{N}}(2N + 12 - B_{\bar{N}}(2N + 10)) + B_{\bar{N}}(2N + 12 - B_{\bar{N}}(2N + 9)) \\
&= B_{\bar{N}}(2N + 12 - (2N + 1)) + B_{\bar{N}}(2N + 12 - (N + 16)) + B_{\bar{N}}(2N + 12 - (N + 14)) \\
&= B_{\bar{N}}(11) + B_{\bar{N}}(N - 4) + B_{\bar{N}}(N - 2) = 11 + (N - 4) + (N - 2) = \mathbf{2N} + \mathbf{5} \\
&(N \geq 11)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 13) &= B_{\bar{N}}(2N + 13 - B_{\bar{N}}(2N + 12)) + B_{\bar{N}}(2N + 13 - B_{\bar{N}}(2N + 11)) + B_{\bar{N}}(2N + 13 - B_{\bar{N}}(2N + 10)) \\
&= B_{\bar{N}}(2N + 13 - (2N + 5)) + B_{\bar{N}}(2N + 13 - (2N + 1)) + B_{\bar{N}}(2N + 13 - (N + 16)) \\
&= B_{\bar{N}}(8) + B_{\bar{N}}(12) + B_{\bar{N}}(N - 3) = 8 + 12 + (N - 3) = \mathbf{N} + \mathbf{17} \\
&(N \geq 12)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 14) &= B_{\bar{N}}(2N + 14 - B_{\bar{N}}(2N + 13)) + B_{\bar{N}}(2N + 14 - B_{\bar{N}}(2N + 12)) + B_{\bar{N}}(2N + 14 - B_{\bar{N}}(2N + 11)) \\
&= B_{\bar{N}}(2N + 14 - (N + 17)) + B_{\bar{N}}(2N + 14 - (2N + 5)) + B_{\bar{N}}(2N + 14 - (2N + 1)) \\
&= B_{\bar{N}}(N - 3) + B_{\bar{N}}(9) + B_{\bar{N}}(13) = (N - 3) + 9 + 13 = \mathbf{N} + \mathbf{19} \\
&(N \geq 14)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 15) &= B_{\bar{N}}(2N + 15 - B_{\bar{N}}(2N + 14)) + B_{\bar{N}}(2N + 15 - B_{\bar{N}}(2N + 13)) + B_{\bar{N}}(2N + 15 - B_{\bar{N}}(2N + 12)) \\
&= B_{\bar{N}}(2N + 15 - (N + 19)) + B_{\bar{N}}(2N + 15 - (N + 17)) + B_{\bar{N}}(2N + 15 - (2N + 5)) \\
&= B_{\bar{N}}(N - 4) + B_{\bar{N}}(N - 2) + B_{\bar{N}}(10) = (N - 4) + (N - 2) + 10 = \mathbf{2N} + \mathbf{4} \\
&(N \geq 15)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 16) &= B_{\bar{N}}(2N + 16 - B_{\bar{N}}(2N + 15)) + B_{\bar{N}}(2N + 16 - B_{\bar{N}}(2N + 14)) + B_{\bar{N}}(2N + 16 - B_{\bar{N}}(2N + 13)) \\
&= B_{\bar{N}}(2N + 16 - (2N + 4)) + B_{\bar{N}}(2N + 16 - (N + 19)) + B_{\bar{N}}(2N + 16 - (N + 17)) \\
&= B_{\bar{N}}(12) + B_{\bar{N}}(N - 3) + B_{\bar{N}}(N - 1) = 12 + (N - 3) + (N - 1) = \mathbf{2N} + \mathbf{8} \\
&(N \geq 16)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 17) &= B_{\bar{N}}(2N + 17 - B_{\bar{N}}(2N + 16)) + B_{\bar{N}}(2N + 17 - B_{\bar{N}}(2N + 15)) + B_{\bar{N}}(2N + 17 - B_{\bar{N}}(2N + 14)) \\
&= B_{\bar{N}}(2N + 17 - (2N + 8)) + B_{\bar{N}}(2N + 17 - (2N + 4)) + B_{\bar{N}}(2N + 17 - (N + 19)) \\
&= B_{\bar{N}}(9) + B_{\bar{N}}(13) + B_{\bar{N}}(N - 2) = 9 + 13 + (N - 2) = \mathbf{N} + \mathbf{20} \\
&(N \geq 13)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 18) &= B_{\bar{N}}(2N + 18 - B_{\bar{N}}(2N + 17)) + B_{\bar{N}}(2N + 18 - B_{\bar{N}}(2N + 16)) + B_{\bar{N}}(2N + 18 - B_{\bar{N}}(2N + 15)) \\
&= B_{\bar{N}}(2N + 18 - (N + 20)) + B_{\bar{N}}(2N + 18 - (2N + 8)) + B_{\bar{N}}(2N + 18 - (2N + 4)) \\
&= B_{\bar{N}}(N - 2) + B_{\bar{N}}(10) + B_{\bar{N}}(14) = (N - 2) + 10 + 14 = \mathbf{N} + \mathbf{22} \\
&(N \geq 14)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 19) &= B_{\bar{N}}(2N + 19 - B_{\bar{N}}(2N + 18)) + B_{\bar{N}}(2N + 19 - B_{\bar{N}}(2N + 17)) + B_{\bar{N}}(2N + 19 - B_{\bar{N}}(2N + 16)) \\
&= B_{\bar{N}}(2N + 19 - (N + 22)) + B_{\bar{N}}(2N + 19 - (N + 20)) + B_{\bar{N}}(2N + 19 - (2N + 8)) \\
&= B_{\bar{N}}(N - 3) + B_{\bar{N}}(N - 1) + B_{\bar{N}}(11) = (N - 3) + (N - 1) + 11 = \mathbf{2N} + \mathbf{7} \\
&(N \geq 11)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 20) &= B_{\bar{N}}(2N + 20 - B_{\bar{N}}(2N + 19)) + B_{\bar{N}}(2N + 20 - B_{\bar{N}}(2N + 18)) + B_{\bar{N}}(2N + 20 - B_{\bar{N}}(2N + 17)) \\
&= B_{\bar{N}}(2N + 20 - (2N + 7)) + B_{\bar{N}}(2N + 20 - (N + 22)) + B_{\bar{N}}(2N + 20 - (N + 20)) \\
&= B_{\bar{N}}(13) + B_{\bar{N}}(N - 2) + B_{\bar{N}}(N) = 13 + (N - 2) + N = \mathbf{2N} + \mathbf{11} \\
&(N \geq 13)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(\mathbf{2N} + \mathbf{21}) &= B_{\bar{N}}(2N + 21 - B_{\bar{N}}(2N + 20)) + B_{\bar{N}}(2N + 21 - B_{\bar{N}}(2N + 19)) + B_{\bar{N}}(2N + 21 - B_{\bar{N}}(2N + 18)) \\
&= B_{\bar{N}}(2N + 21 - (2N + 11)) + B_{\bar{N}}(2N + 21 - (2N + 7)) + B_{\bar{N}}(2N + 21 - (N + 22)) \\
&= B_{\bar{N}}(10) + B_{\bar{N}}(14) + B_{\bar{N}}(N - 1) = 10 + 14 + (N - 1) = \mathbf{N} + \mathbf{23} \\
&(N \geq 14)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(\mathbf{2N} + \mathbf{22}) &= B_{\bar{N}}(2N + 22 - B_{\bar{N}}(2N + 21)) + B_{\bar{N}}(2N + 22 - B_{\bar{N}}(2N + 20)) + B_{\bar{N}}(2N + 22 - B_{\bar{N}}(2N + 19)) \\
&= B_{\bar{N}}(2N + 22 - (N + 23)) + B_{\bar{N}}(2N + 22 - (2N + 11)) + B_{\bar{N}}(2N + 22 - (2N + 7)) \\
&= B_{\bar{N}}(N - 1) + B_{\bar{N}}(11) + B_{\bar{N}}(15) = (N - 1) + 11 + 15 = \mathbf{N} + \mathbf{25} \\
&(N \geq 22)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(\mathbf{2N} + \mathbf{23}) &= B_{\bar{N}}(2N + 23 - B_{\bar{N}}(2N + 22)) + B_{\bar{N}}(2N + 23 - B_{\bar{N}}(2N + 21)) + B_{\bar{N}}(2N + 23 - B_{\bar{N}}(2N + 20)) \\
&= B_{\bar{N}}(2N + 23 - (N + 25)) + B_{\bar{N}}(2N + 23 - (N + 23)) + B_{\bar{N}}(2N + 23 - (2N + 11)) \\
&= B_{\bar{N}}(N - 2) + B_{\bar{N}}(N) + B_{\bar{N}}(12) = (N - 2) + N + 12 = \mathbf{2N} + \mathbf{10} \\
&(N \geq 71)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(\mathbf{2N} + \mathbf{24}) &= B_{\bar{N}}(2N + 24 - B_{\bar{N}}(2N + 23)) + B_{\bar{N}}(2N + 24 - B_{\bar{N}}(2N + 22)) + B_{\bar{N}}(2N + 24 - B_{\bar{N}}(2N + 21)) \\
&= B_{\bar{N}}(2N + 24 - (2N + 10)) + B_{\bar{N}}(2N + 24 - (N + 25)) + B_{\bar{N}}(2N + 24 - (N + 23)) \\
&= B_{\bar{N}}(14) + B_{\bar{N}}(N - 1) + B_{\bar{N}}(N + 1) = 14 + (N - 1) + 6 = \mathbf{N} + \mathbf{19} \\
&(N \geq 79)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(\mathbf{2N} + \mathbf{25}) &= B_{\bar{N}}(2N + 25 - B_{\bar{N}}(2N + 24)) + B_{\bar{N}}(2N + 25 - B_{\bar{N}}(2N + 23)) + B_{\bar{N}}(2N + 25 - B_{\bar{N}}(2N + 22)) \\
&= B_{\bar{N}}(2N + 25 - (N + 19)) + B_{\bar{N}}(2N + 25 - (2N + 10)) + B_{\bar{N}}(2N + 25 - (N + 25)) \\
&= B_{\bar{N}}(N + 6) + B_{\bar{N}}(15) + B_{\bar{N}}(N) = (N + 4) + 15 + N = \mathbf{2N} + \mathbf{19} \\
&(N \geq 78)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 26) &= B_{\bar{N}}(2N + 26 - B_{\bar{N}}(2N + 25)) + B_{\bar{N}}(2N + 26 - B_{\bar{N}}(2N + 24)) + B_{\bar{N}}(2N + 26 - B_{\bar{N}}(2N + 23)) \\
&= B_{\bar{N}}(2N + 26 - (2N + 19)) + B_{\bar{N}}(2N + 26 - (N + 19)) + B_{\bar{N}}(2N + 26 - (2N + 10)) \\
&= B_{\bar{N}}(7) + B_{\bar{N}}(N + 7) + B_{\bar{N}}(16) = 7 + (N + 5) + 16 = \mathbf{N} + \mathbf{28} \\
&(\mathbf{N} \geq \mathbf{189})
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 27) &= B_{\bar{N}}(2N + 27 - B_{\bar{N}}(2N + 26)) + B_{\bar{N}}(2N + 27 - B_{\bar{N}}(2N + 25)) + B_{\bar{N}}(2N + 27 - B_{\bar{N}}(2N + 24)) \\
&= B_{\bar{N}}(2N + 27 - (N + 28)) + B_{\bar{N}}(2N + 27 - (2N + 19)) + B_{\bar{N}}(2N + 27 - (N + 19)) \\
&= B_{\bar{N}}(N - 1) + B_{\bar{N}}(8) + B_{\bar{N}}(N + 8) = (N - 1) + 8 + (N + 6) = \mathbf{2N} + \mathbf{13} \\
&(\mathbf{N} \geq \mathbf{196})
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 28) &= B_{\bar{N}}(2N + 28 - B_{\bar{N}}(2N + 27)) + B_{\bar{N}}(2N + 28 - B_{\bar{N}}(2N + 26)) + B_{\bar{N}}(2N + 28 - B_{\bar{N}}(2N + 25)) \\
&= B_{\bar{N}}(2N + 28 - (2N + 13)) + B_{\bar{N}}(2N + 28 - (N + 28)) + B_{\bar{N}}(2N + 28 - (2N + 19)) \\
&= B_{\bar{N}}(15) + B_{\bar{N}}(N) + B_{\bar{N}}(9) = 15 + N + 9 = \mathbf{N} + \mathbf{24} \\
&(N \geq 15)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 29) &= B_{\bar{N}}(2N + 29 - B_{\bar{N}}(2N + 28)) + B_{\bar{N}}(2N + 29 - B_{\bar{N}}(2N + 27)) + B_{\bar{N}}(2N + 29 - B_{\bar{N}}(2N + 26)) \\
&= B_{\bar{N}}(2N + 29 - (N + 24)) + B_{\bar{N}}(2N + 29 - (2N + 13)) + B_{\bar{N}}(2N + 29 - (N + 28)) \\
&= B_{\bar{N}}(N + 5) + B_{\bar{N}}(16) + B_{\bar{N}}(N + 1) = 9 + 16 + 6 = \mathbf{31} \\
&(N \geq 16)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 30) &= B_{\bar{N}}(2N + 30 - B_{\bar{N}}(2N + 29)) + B_{\bar{N}}(2N + 30 - B_{\bar{N}}(2N + 28)) + B_{\bar{N}}(2N + 30 - B_{\bar{N}}(2N + 27)) \\
&= B_{\bar{N}}(2N + 30 - 31) + B_{\bar{N}}(2N + 30 - (N + 24)) + B_{\bar{N}}(2N + 30 - (2N + 13)) \\
&= B_{\bar{N}}(2N - 1) + B_{\bar{N}}(N + 6) + B_{\bar{N}}(17) = 6 + (N + 4) + 17 = \mathbf{N} + \mathbf{27} \\
&(N \geq 17)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + \mathbf{31}) &= B_{\bar{N}}(2N + 31 - B_{\bar{N}}(2N + 30)) + B_{\bar{N}}(2N + 31 - B_{\bar{N}}(2N + 29)) + B_{\bar{N}}(2N + 31 - B_{\bar{N}}(2N + 28)) \\
&= B_{\bar{N}}(2N + 31 - (N + 27)) + B_{\bar{N}}(2N + 31 - 31) + B_{\bar{N}}(2N + 31 - (N + 24)) \\
&= B_{\bar{N}}(N + 4) + B_{\bar{N}}(2N) + B_{\bar{N}}(N + 7) = (N + 3) + (3N - 3) + (N + 5) = \mathbf{5N} + \mathbf{5} \\
&(N \geq 1)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + \mathbf{32}) &= B_{\bar{N}}(2N + 32 - B_{\bar{N}}(2N + 31)) + B_{\bar{N}}(2N + 32 - B_{\bar{N}}(2N + 30)) + B_{\bar{N}}(2N + 32 - B_{\bar{N}}(2N + 29)) \\
&= B_{\bar{N}}(2N + 32 - (5N + 5)) + B_{\bar{N}}(2N + 32 - (N + 27)) + B_{\bar{N}}(2N + 32 - 31) \\
&= B_{\bar{N}}(-3N + 27) + B_{\bar{N}}(N + 5) + B_{\bar{N}}(2N + 1) = 0 + 9 + (N + 9) = \mathbf{N} + \mathbf{18} \\
&(N \geq 9)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + \mathbf{33}) &= B_{\bar{N}}(2N + 33 - B_{\bar{N}}(2N + 32)) + B_{\bar{N}}(2N + 33 - B_{\bar{N}}(2N + 31)) + B_{\bar{N}}(2N + 33 - B_{\bar{N}}(2N + 30)) \\
&= B_{\bar{N}}(2N + 33 - (N + 18)) + B_{\bar{N}}(2N + 33 - (5N + 5)) + B_{\bar{N}}(2N + 33 - (N + 27)) \\
&= B_{\bar{N}}(N + 15) + B_{\bar{N}}(-3N + 28) + B_{\bar{N}}(N + 6) = (N + 11) + 0 + (N + 4) = \mathbf{2N} + \mathbf{15} \\
&(N \geq 10)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + \mathbf{34}) &= B_{\bar{N}}(2N + 34 - B_{\bar{N}}(2N + 33)) + B_{\bar{N}}(2N + 34 - B_{\bar{N}}(2N + 32)) + B_{\bar{N}}(2N + 34 - B_{\bar{N}}(2N + 31)) \\
&= B_{\bar{N}}(2N + 34 - (2N + 15)) + B_{\bar{N}}(2N + 34 - (N + 18)) + B_{\bar{N}}(2N + 34 - (5N + 5)) \\
&= B_{\bar{N}}(19) + B_{\bar{N}}(N + 16) + B_{\bar{N}}(-3N + 29) = 19 + 17 + 0 = \mathbf{36} \\
&(N \geq 19)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + \mathbf{35}) &= B_{\bar{N}}(2N + 35 - B_{\bar{N}}(2N + 34)) + B_{\bar{N}}(2N + 35 - B_{\bar{N}}(2N + 33)) + B_{\bar{N}}(2N + 35 - B_{\bar{N}}(2N + 32)) \\
&= B_{\bar{N}}(2N + 35 - 36) + B_{\bar{N}}(2N + 35 - (2N + 15)) + B_{\bar{N}}(2N + 35 - (N + 18)) \\
&= B_{\bar{N}}(2N - 1) + B_{\bar{N}}(20) + B_{\bar{N}}(N + 17) = 6 + 20 + (N + 13) = \mathbf{N} + \mathbf{39} \\
&(N \geq 20)
\end{aligned}$$



$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 36) &= B_{\bar{N}}(2N + 36 - B_{\bar{N}}(2N + 35)) + B_{\bar{N}}(2N + 36 - B_{\bar{N}}(2N + 34)) + B_{\bar{N}}(2N + 36 - B_{\bar{N}}(2N + 33)) \\
&= B_{\bar{N}}(2N + 36 - (N + 39)) + B_{\bar{N}}(2N + 36 - 36) + B_{\bar{N}}(2N + 36 - (2N + 15)) \\
&= B_{\bar{N}}(N - 3) + B_{\bar{N}}(2N) + B_{\bar{N}}(21) = (N - 3) + (3N - 3) + 21 = \mathbf{4N} + \mathbf{15} \\
&(N \geq 21)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 37) &= B_{\bar{N}}(2N + 37 - B_{\bar{N}}(2N + 36)) + B_{\bar{N}}(2N + 37 - B_{\bar{N}}(2N + 35)) + B_{\bar{N}}(2N + 37 - B_{\bar{N}}(2N + 34)) \\
&= B_{\bar{N}}(2N + 37 - (4N + 15)) + B_{\bar{N}}(2N + 37 - (N + 39)) + B_{\bar{N}}(2N + 37 - 36) \\
&= B_{\bar{N}}(-2N + 22) + B_{\bar{N}}(N - 2) + B_{\bar{N}}(2N + 1) = 0 + (N - 2) + (N + 9) = \mathbf{2N} + \mathbf{7} \\
&(N \geq 11)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 38) &= B_{\bar{N}}(2N + 38 - B_{\bar{N}}(2N + 37)) + B_{\bar{N}}(2N + 38 - B_{\bar{N}}(2N + 36)) + B_{\bar{N}}(2N + 38 - B_{\bar{N}}(2N + 35)) \\
&= B_{\bar{N}}(2N + 38 - (2N + 7)) + B_{\bar{N}}(2N + 38 - (4N + 15)) + B_{\bar{N}}(2N + 38 - (N + 39)) \\
&= B_{\bar{N}}(31) + B_{\bar{N}}(-2N + 23) + B_{\bar{N}}(N - 1) = 31 + 0 + (N - 1) = \mathbf{N} + \mathbf{30} \\
&(N \geq 31)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 39) &= B_{\bar{N}}(2N + 39 - B_{\bar{N}}(2N + 38)) + B_{\bar{N}}(2N + 39 - B_{\bar{N}}(2N + 37)) + B_{\bar{N}}(2N + 39 - B_{\bar{N}}(2N + 36)) \\
&= B_{\bar{N}}(2N + 39 - (N + 30)) + B_{\bar{N}}(2N + 39 - (2N + 7)) + B_{\bar{N}}(2N + 39 - (4N + 15)) \\
&= B_{\bar{N}}(N + 9) + B_{\bar{N}}(32) + B_{\bar{N}}(-2N + 24) = 12 + 32 + 0 = \mathbf{44} \\
&(N \geq 32)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 40) &= B_{\bar{N}}(2N + 40 - B_{\bar{N}}(2N + 39)) + B_{\bar{N}}(2N + 40 - B_{\bar{N}}(2N + 38)) + B_{\bar{N}}(2N + 40 - B_{\bar{N}}(2N + 37)) \\
&= B_{\bar{N}}(2N + 40 - 44) + B_{\bar{N}}(2N + 40 - (N + 30)) + B_{\bar{N}}(2N + 40 - (2N + 7)) \\
&= B_{\bar{N}}(2N - 4) + B_{\bar{N}}(N + 10) + B_{\bar{N}}(33) = \left( \frac{16N}{7} + \frac{299}{7} \right) + (N + 7) + 33 = \frac{23\mathbf{N}}{7} + \frac{579}{7} \\
&(N \geq 71)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(\mathbf{2N} + \mathbf{41}) &= B_{\bar{N}}(2N + 41 - B_{\bar{N}}(2N + 40)) + B_{\bar{N}}(2N + 41 - B_{\bar{N}}(2N + 39)) + B_{\bar{N}}(2N + 41 - B_{\bar{N}}(2N + 38)) \\
&= B_{\bar{N}}\left(2N + 41 - \left(\frac{23N}{7} + \frac{579}{7}\right)\right) + B_{\bar{N}}(2N + 41 - 44) + B_{\bar{N}}(2N + 41 - (N + 30)) \\
&= B_{\bar{N}}\left(-\frac{9N}{7} - \frac{292}{7}\right) + B_{\bar{N}}(2N - 3) + B_{\bar{N}}(N + 11) = 0 + \left(\frac{15N}{7} - \frac{57}{7}\right) + (N + 8) = \frac{\mathbf{22N}}{7} - \frac{\mathbf{1}}{7} \\
&\quad (N \geq 70)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(\mathbf{2N} + \mathbf{42}) &= B_{\bar{N}}(2N + 42 - B_{\bar{N}}(2N + 41)) + B_{\bar{N}}(2N + 42 - B_{\bar{N}}(2N + 40)) + B_{\bar{N}}(2N + 42 - B_{\bar{N}}(2N + 39)) \\
&= B_{\bar{N}}\left(2N + 42 - \left(\frac{22N}{7} - \frac{1}{7}\right)\right) + B_{\bar{N}}\left(2N + 42 - \left(\frac{23N}{7} + \frac{579}{7}\right)\right) + B_{\bar{N}}(2N + 42 - 44) \\
&= B_{\bar{N}}\left(-\frac{8N}{7} + \frac{295}{7}\right) + B_{\bar{N}}\left(-\frac{9N}{7} - \frac{285}{7}\right) + B_{\bar{N}}(2N - 2) = 0 + 0 + (N - 2) = \mathbf{N} - \mathbf{2} \\
&\quad (N \geq 69)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(\mathbf{2N} + \mathbf{43}) &= B_{\bar{N}}(2N + 43 - B_{\bar{N}}(2N + 42)) + B_{\bar{N}}(2N + 43 - B_{\bar{N}}(2N + 41)) + B_{\bar{N}}(2N + 43 - B_{\bar{N}}(2N + 40)) \\
&= B_{\bar{N}}(2N + 43 - (N - 2)) + B_{\bar{N}}\left(2N + 43 - \left(\frac{22N}{7} - \frac{1}{7}\right)\right) + B_{\bar{N}}\left(2N + 43 - \left(\frac{23N}{7} + \frac{579}{7}\right)\right) \\
&= B_{\bar{N}}(N + 45) + B_{\bar{N}}\left(-\frac{8N}{7} + \frac{302}{7}\right) + B_{\bar{N}}\left(-\frac{9N}{7} - \frac{278}{7}\right) = (N + 40) + 0 + 0 = \mathbf{N} + \mathbf{40} \\
&\quad (N \geq 38)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(\mathbf{2N} + \mathbf{44}) &= B_{\bar{N}}(2N + 44 - B_{\bar{N}}(2N + 43)) + B_{\bar{N}}(2N + 44 - B_{\bar{N}}(2N + 42)) + B_{\bar{N}}(2N + 44 - B_{\bar{N}}(2N + 41)) \\
&= B_{\bar{N}}(2N + 44 - (N + 40)) + B_{\bar{N}}(2N + 44 - (N - 2)) + B_{\bar{N}}\left(2N + 44 - \left(\frac{22N}{7} - \frac{1}{7}\right)\right) \\
&= B_{\bar{N}}(N + 4) + B_{\bar{N}}(N + 46) + B_{\bar{N}}\left(-\frac{8N}{7} + \frac{309}{7}\right) = (N + 3) + (N + 47) + 0 = \mathbf{2N} + \mathbf{50} \\
&\quad (N \geq 39)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(\mathbf{2N} + \mathbf{45}) &= B_{\bar{N}}(2N + 45 - B_{\bar{N}}(2N + 44)) + B_{\bar{N}}(2N + 45 - B_{\bar{N}}(2N + 43)) + B_{\bar{N}}(2N + 45 - B_{\bar{N}}(2N + 42)) \\
&= B_{\bar{N}}(2N + 45 - (2N + 50)) + B_{\bar{N}}(2N + 45 - (N + 40)) + B_{\bar{N}}(2N + 45 - (N - 2)) \\
&= B_{\bar{N}}(-5) + B_{\bar{N}}(N + 5) + B_{\bar{N}}(N + 47) = 0 + 9 + 16 = \mathbf{25} \\
&(N \geq 1)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(\mathbf{2N} + \mathbf{46}) &= B_{\bar{N}}(2N + 46 - B_{\bar{N}}(2N + 45)) + B_{\bar{N}}(2N + 46 - B_{\bar{N}}(2N + 44)) + B_{\bar{N}}(2N + 46 - B_{\bar{N}}(2N + 43)) \\
&= B_{\bar{N}}(2N + 46 - 25) + B_{\bar{N}}(2N + 46 - (2N + 50)) + B_{\bar{N}}(2N + 46 - (N + 40)) \\
&= B_{\bar{N}}(2N + 21) + B_{\bar{N}}(-4) + B_{\bar{N}}(N + 6) = (N + 23) + 0 + (N + 4) = \mathbf{2N} + \mathbf{27} \\
&(N \geq 1)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(\mathbf{2N} + \mathbf{47}) &= B_{\bar{N}}(2N + 47 - B_{\bar{N}}(2N + 46)) + B_{\bar{N}}(2N + 47 - B_{\bar{N}}(2N + 45)) + B_{\bar{N}}(2N + 47 - B_{\bar{N}}(2N + 44)) \\
&= B_{\bar{N}}(2N + 47 - (2N + 27)) + B_{\bar{N}}(2N + 47 - 25) + B_{\bar{N}}(2N + 47 - (2N + 50)) \\
&= B_{\bar{N}}(20) + B_{\bar{N}}(2N + 22) + B_{\bar{N}}(-3) = 20 + (N + 25) + 0 = \mathbf{N} + \mathbf{45} \\
&(N \geq 20)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(\mathbf{2N} + \mathbf{48}) &= B_{\bar{N}}(2N + 48 - B_{\bar{N}}(2N + 47)) + B_{\bar{N}}(2N + 48 - B_{\bar{N}}(2N + 46)) + B_{\bar{N}}(2N + 48 - B_{\bar{N}}(2N + 45)) \\
&= B_{\bar{N}}(2N + 48 - (N + 45)) + B_{\bar{N}}(2N + 48 - (2N + 27)) + B_{\bar{N}}(2N + 48 - 25) \\
&= B_{\bar{N}}(N + 3) + B_{\bar{N}}(21) + B_{\bar{N}}(2N + 23) = (N + 2) + 21 + (2N + 10) = \mathbf{3N} + \mathbf{33} \\
&(N \geq 21)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(\mathbf{2N} + \mathbf{49}) &= B_{\bar{N}}(2N + 49 - B_{\bar{N}}(2N + 48)) + B_{\bar{N}}(2N + 49 - B_{\bar{N}}(2N + 47)) + B_{\bar{N}}(2N + 49 - B_{\bar{N}}(2N + 46)) \\
&= B_{\bar{N}}(2N + 49 - (3N + 33)) + B_{\bar{N}}(2N + 49 - (N + 45)) + B_{\bar{N}}(2N + 49 - (2N + 27)) \\
&= B_{\bar{N}}(-N + 16) + B_{\bar{N}}(N + 4) + B_{\bar{N}}(22) = 0 + (N + 3) + 22 = \mathbf{N} + \mathbf{25} \\
&(N \geq 22)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 50) &= B_{\bar{N}}(2N + 50 - B_{\bar{N}}(2N + 49)) + B_{\bar{N}}(2N + 50 - B_{\bar{N}}(2N + 48)) + B_{\bar{N}}(2N + 50 - B_{\bar{N}}(2N + 47)) \\
&= B_{\bar{N}}(2N + 50 - (N + 25)) + B_{\bar{N}}(2N + 50 - (3N + 33)) + B_{\bar{N}}(2N + 50 - (N + 45)) \\
&= B_{\bar{N}}(N + 25) + B_{\bar{N}}(-N + 17) + B_{\bar{N}}(N + 5) = (2N + 5) + 0 + 9 = \mathbf{2N} + \mathbf{14} \\
&(N \geq 17)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 51) &= B_{\bar{N}}(2N + 51 - B_{\bar{N}}(2N + 50)) + B_{\bar{N}}(2N + 51 - B_{\bar{N}}(2N + 49)) + B_{\bar{N}}(2N + 51 - B_{\bar{N}}(2N + 48)) \\
&= B_{\bar{N}}(2N + 51 - (2N + 14)) + B_{\bar{N}}(2N + 51 - (N + 25)) + B_{\bar{N}}(2N + 51 - (3N + 33)) \\
&= B_{\bar{N}}(37) + B_{\bar{N}}(N + 26) + B_{\bar{N}}(-N + 18) = 37 + 9 + 0 = \mathbf{46} \\
&(N \geq 37)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 52) &= B_{\bar{N}}(2N + 52 - B_{\bar{N}}(2N + 51)) + B_{\bar{N}}(2N + 52 - B_{\bar{N}}(2N + 50)) + B_{\bar{N}}(2N + 52 - B_{\bar{N}}(2N + 49)) \\
&= B_{\bar{N}}(2N + 52 - 46) + B_{\bar{N}}(2N + 52 - (2N + 14)) + B_{\bar{N}}(2N + 52 - (N + 25)) \\
&= B_{\bar{N}}(2N + 6) + B_{\bar{N}}(38) + B_{\bar{N}}(N + 27) = (2N + 8) + 38 + 18 = \mathbf{2N} + \mathbf{64} \\
&(N \geq 38)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 53) &= B_{\bar{N}}(2N + 53 - B_{\bar{N}}(2N + 52)) + B_{\bar{N}}(2N + 53 - B_{\bar{N}}(2N + 51)) + B_{\bar{N}}(2N + 53 - B_{\bar{N}}(2N + 50)) \\
&= B_{\bar{N}}(2N + 53 - (2N + 64)) + B_{\bar{N}}(2N + 53 - 46) + B_{\bar{N}}(2N + 53 - (2N + 14)) \\
&= B_{\bar{N}}(-11) + B_{\bar{N}}(2N + 7) + B_{\bar{N}}(39) = 0 + (N + 1) + 39 = \mathbf{N} + \mathbf{40} \\
&(N \geq 39)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 54) &= B_{\bar{N}}(2N + 54 - B_{\bar{N}}(2N + 53)) + B_{\bar{N}}(2N + 54 - B_{\bar{N}}(2N + 52)) + B_{\bar{N}}(2N + 54 - B_{\bar{N}}(2N + 51)) \\
&= B_{\bar{N}}(2N + 54 - (N + 40)) + B_{\bar{N}}(2N + 54 - (2N + 64)) + B_{\bar{N}}(2N + 54 - 46) \\
&= B_{\bar{N}}(N + 14) + B_{\bar{N}}(-10) + B_{\bar{N}}(2N + 8) = (N + 10) + 0 + (2N + 2) = \mathbf{3N} + \mathbf{12} \\
&(N \geq 1)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 55) &= B_{\bar{N}}(2N + 55 - B_{\bar{N}}(2N + 54)) + B_{\bar{N}}(2N + 55 - B_{\bar{N}}(2N + 53)) + B_{\bar{N}}(2N + 55 - B_{\bar{N}}(2N + 52)) \\
&= B_{\bar{N}}(2N + 55 - (3N + 12)) + B_{\bar{N}}(2N + 55 - (N + 40)) + B_{\bar{N}}(2N + 55 - (2N + 64)) \\
&= B_{\bar{N}}(-N + 43) + B_{\bar{N}}(N + 15) + B_{\bar{N}}(-9) = 0 + (N + 11) + 0 = \mathbf{N} + \mathbf{11} \\
&(N \geq 43)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 56) &= B_{\bar{N}}(2N + 56 - B_{\bar{N}}(2N + 55)) + B_{\bar{N}}(2N + 56 - B_{\bar{N}}(2N + 54)) + B_{\bar{N}}(2N + 56 - B_{\bar{N}}(2N + 53)) \\
&= B_{\bar{N}}(2N + 56 - (N + 11)) + B_{\bar{N}}(2N + 56 - (3N + 12)) + B_{\bar{N}}(2N + 56 - (N + 40)) \\
&= B_{\bar{N}}(N + 45) + B_{\bar{N}}(-N + 44) + B_{\bar{N}}(N + 16) = (N + 40) + 0 + 17 = \mathbf{N} + \mathbf{57} \\
&(N \geq 44)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 57) &= B_{\bar{N}}(2N + 57 - B_{\bar{N}}(2N + 56)) + B_{\bar{N}}(2N + 57 - B_{\bar{N}}(2N + 55)) + B_{\bar{N}}(2N + 57 - B_{\bar{N}}(2N + 54)) \\
&= B_{\bar{N}}(2N + 57 - (N + 57)) + B_{\bar{N}}(2N + 57 - (N + 11)) + B_{\bar{N}}(2N + 57 - (3N + 12)) \\
&= B_{\bar{N}}(N) + B_{\bar{N}}(N + 46) + B_{\bar{N}}(-N + 45) = N + (N + 47) + 0 = \mathbf{2N} + \mathbf{47} \\
&(N \geq 45)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 58) &= B_{\bar{N}}(2N + 58 - B_{\bar{N}}(2N + 57)) + B_{\bar{N}}(2N + 58 - B_{\bar{N}}(2N + 56)) + B_{\bar{N}}(2N + 58 - B_{\bar{N}}(2N + 55)) \\
&= B_{\bar{N}}(2N + 58 - (2N + 47)) + B_{\bar{N}}(2N + 58 - (N + 57)) + B_{\bar{N}}(2N + 58 - (N + 11)) \\
&= B_{\bar{N}}(11) + B_{\bar{N}}(N + 1) + B_{\bar{N}}(N + 47) = 11 + 6 + 16 = \mathbf{33} \\
&(N \geq 11)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 59) &= B_{\bar{N}}(2N + 59 - B_{\bar{N}}(2N + 58)) + B_{\bar{N}}(2N + 59 - B_{\bar{N}}(2N + 57)) + B_{\bar{N}}(2N + 59 - B_{\bar{N}}(2N + 56)) \\
&= B_{\bar{N}}(2N + 59 - 33) + B_{\bar{N}}(2N + 59 - (2N + 47)) + B_{\bar{N}}(2N + 59 - (N + 57)) \\
&= B_{\bar{N}}(2N + 26) + B_{\bar{N}}(12) + B_{\bar{N}}(N + 2) = (N + 28) + 12 + (N + 1) = \mathbf{2N} + \mathbf{41} \\
&(N \geq 12)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + \mathbf{60}) &= B_{\bar{N}}(2N + 60 - B_{\bar{N}}(2N + 59)) + B_{\bar{N}}(2N + 60 - B_{\bar{N}}(2N + 58)) + B_{\bar{N}}(2N + 60 - B_{\bar{N}}(2N + 57)) \\
&= B_{\bar{N}}(2N + 60 - (2N + 41)) + B_{\bar{N}}(2N + 60 - 33) + B_{\bar{N}}(2N + 60 - (2N + 47)) \\
&= B_{\bar{N}}(19) + B_{\bar{N}}(2N + 27) + B_{\bar{N}}(13) = 19 + (2N + 13) + 13 = \mathbf{2N} + \mathbf{45} \\
&(N \geq 19)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + \mathbf{61}) &= B_{\bar{N}}(2N + 61 - B_{\bar{N}}(2N + 60)) + B_{\bar{N}}(2N + 61 - B_{\bar{N}}(2N + 59)) + B_{\bar{N}}(2N + 61 - B_{\bar{N}}(2N + 58)) \\
&= B_{\bar{N}}(2N + 61 - (2N + 45)) + B_{\bar{N}}(2N + 61 - (2N + 41)) + B_{\bar{N}}(2N + 61 - 33) \\
&= B_{\bar{N}}(16) + B_{\bar{N}}(20) + B_{\bar{N}}(2N + 28) = 16 + 20 + (N + 24) = \mathbf{N} + \mathbf{60} \\
&(N \geq 20)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + \mathbf{62}) &= B_{\bar{N}}(2N + 62 - B_{\bar{N}}(2N + 61)) + B_{\bar{N}}(2N + 62 - B_{\bar{N}}(2N + 60)) + B_{\bar{N}}(2N + 62 - B_{\bar{N}}(2N + 59)) \\
&= B_{\bar{N}}(2N + 62 - (N + 60)) + B_{\bar{N}}(2N + 62 - (2N + 45)) + B_{\bar{N}}(2N + 62 - (2N + 41)) \\
&= B_{\bar{N}}(N + 2) + B_{\bar{N}}(17) + B_{\bar{N}}(21) = (N + 1) + 17 + 21 = \mathbf{N} + \mathbf{39} \\
&(N \geq 21)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + \mathbf{63}) &= B_{\bar{N}}(2N + 63 - B_{\bar{N}}(2N + 62)) + B_{\bar{N}}(2N + 63 - B_{\bar{N}}(2N + 61)) + B_{\bar{N}}(2N + 63 - B_{\bar{N}}(2N + 60)) \\
&= B_{\bar{N}}(2N + 63 - (N + 39)) + B_{\bar{N}}(2N + 63 - (N + 60)) + B_{\bar{N}}(2N + 63 - (2N + 45)) \\
&= B_{\bar{N}}(N + 24) + B_{\bar{N}}(N + 3) + B_{\bar{N}}(18) = (2N + 11) + (N + 2) + 18 = \mathbf{3N} + \mathbf{31} \\
&(N \geq 18)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + \mathbf{64}) &= B_{\bar{N}}(2N + 64 - B_{\bar{N}}(2N + 63)) + B_{\bar{N}}(2N + 64 - B_{\bar{N}}(2N + 62)) + B_{\bar{N}}(2N + 64 - B_{\bar{N}}(2N + 61)) \\
&= B_{\bar{N}}(2N + 64 - (3N + 31)) + B_{\bar{N}}(2N + 64 - (N + 39)) + B_{\bar{N}}(2N + 64 - (N + 60)) \\
&= B_{\bar{N}}(-N + 33) + B_{\bar{N}}(N + 25) + B_{\bar{N}}(N + 4) = 0 + (2N + 5) + (N + 3) = \mathbf{3N} + \mathbf{8} \\
&(N \geq 33)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(\mathbf{2N} + \mathbf{65}) &= B_{\bar{N}}(2N + 65 - B_{\bar{N}}(2N + 64)) + B_{\bar{N}}(2N + 65 - B_{\bar{N}}(2N + 63)) + B_{\bar{N}}(2N + 65 - B_{\bar{N}}(2N + 62)) \\
&= B_{\bar{N}}(2N + 65 - (3N + 8)) + B_{\bar{N}}(2N + 65 - (3N + 31)) + B_{\bar{N}}(2N + 65 - (N + 39)) \\
&= B_{\bar{N}}(-N + 57) + B_{\bar{N}}(-N + 34) + B_{\bar{N}}(N + 26) = 0 + 0 + 9 = \mathbf{9} \\
&(N \geq 57)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(\mathbf{2N} + \mathbf{66}) &= B_{\bar{N}}(2N + 66 - B_{\bar{N}}(2N + 65)) + B_{\bar{N}}(2N + 66 - B_{\bar{N}}(2N + 64)) + B_{\bar{N}}(2N + 66 - B_{\bar{N}}(2N + 63)) \\
&= B_{\bar{N}}(2N + 66 - 9) + B_{\bar{N}}(2N + 66 - (3N + 8)) + B_{\bar{N}}(2N + 66 - (3N + 31)) \\
&= B_{\bar{N}}(2N + 57) + B_{\bar{N}}(-N + 58) + B_{\bar{N}}(-N + 35) = (2N + 47) + 0 + 0 = \mathbf{2N} + \mathbf{47} \\
&(N \geq 58)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(\mathbf{2N} + \mathbf{67}) &= B_{\bar{N}}(2N + 67 - B_{\bar{N}}(2N + 66)) + B_{\bar{N}}(2N + 67 - B_{\bar{N}}(2N + 65)) + B_{\bar{N}}(2N + 67 - B_{\bar{N}}(2N + 64)) \\
&= B_{\bar{N}}(2N + 67 - (2N + 47)) + B_{\bar{N}}(2N + 67 - 9) + B_{\bar{N}}(2N + 67 - (3N + 8)) \\
&= B_{\bar{N}}(20) + B_{\bar{N}}(2N + 58) + B_{\bar{N}}(-N + 59) = 20 + 33 + 0 = \mathbf{53} \\
&(N \geq 59)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(\mathbf{2N} + \mathbf{68}) &= B_{\bar{N}}(2N + 68 - B_{\bar{N}}(2N + 67)) + B_{\bar{N}}(2N + 68 - B_{\bar{N}}(2N + 66)) + B_{\bar{N}}(2N + 68 - B_{\bar{N}}(2N + 65)) \\
&= B_{\bar{N}}(2N + 68 - 53) + B_{\bar{N}}(2N + 68 - (2N + 47)) + B_{\bar{N}}(2N + 68 - 9) \\
&= B_{\bar{N}}(2N + 15) + B_{\bar{N}}(21) + B_{\bar{N}}(2N + 59) = (2N + 4) + 21 + (2N + 41) = \mathbf{4N} + \mathbf{66} \\
&(N \geq 21)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(\mathbf{2N} + \mathbf{69}) &= B_{\bar{N}}(2N + 69 - B_{\bar{N}}(2N + 68)) + B_{\bar{N}}(2N + 69 - B_{\bar{N}}(2N + 67)) + B_{\bar{N}}(2N + 69 - B_{\bar{N}}(2N + 66)) \\
&= B_{\bar{N}}(2N + 69 - (4N + 66)) + B_{\bar{N}}(2N + 69 - 53) + B_{\bar{N}}(2N + 69 - (2N + 47)) \\
&= B_{\bar{N}}(-2N + 3) + B_{\bar{N}}(2N + 16) + B_{\bar{N}}(22) = 0 + (2N + 8) + 22 = \mathbf{2N} + \mathbf{30} \\
&(N \geq 22)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + \mathbf{70}) &= B_{\bar{N}}(2N + 70 - B_{\bar{N}}(2N + 69)) + B_{\bar{N}}(2N + 70 - B_{\bar{N}}(2N + 68)) + B_{\bar{N}}(2N + 70 - B_{\bar{N}}(2N + 67)) \\
&= B_{\bar{N}}(2N + 70 - (2N + 30)) + B_{\bar{N}}(2N + 70 - (4N + 66)) + B_{\bar{N}}(2N + 70 - 53) \\
&= B_{\bar{N}}(40) + B_{\bar{N}}(-2N + 4) + B_{\bar{N}}(2N + 17) = 40 + 0 + (N + 20) = \mathbf{N} + \mathbf{60} \\
&(N \geq 40)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + \mathbf{71}) &= B_{\bar{N}}(2N + 71 - B_{\bar{N}}(2N + 70)) + B_{\bar{N}}(2N + 71 - B_{\bar{N}}(2N + 69)) + B_{\bar{N}}(2N + 71 - B_{\bar{N}}(2N + 68)) \\
&= B_{\bar{N}}(2N + 71 - (N + 60)) + B_{\bar{N}}(2N + 71 - (2N + 30)) + B_{\bar{N}}(2N + 71 - (4N + 66)) \\
&= B_{\bar{N}}(N + 11) + B_{\bar{N}}(41) + B_{\bar{N}}(-2N + 5) = (N + 8) + 41 + 0 = \mathbf{N} + \mathbf{49} \\
&(N \geq 41)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + \mathbf{72}) &= B_{\bar{N}}(2N + 72 - B_{\bar{N}}(2N + 71)) + B_{\bar{N}}(2N + 72 - B_{\bar{N}}(2N + 70)) + B_{\bar{N}}(2N + 72 - B_{\bar{N}}(2N + 69)) \\
&= B_{\bar{N}}(2N + 72 - (N + 49)) + B_{\bar{N}}(2N + 72 - (N + 60)) + B_{\bar{N}}(2N + 72 - (2N + 30)) \\
&= B_{\bar{N}}(N + 23) + B_{\bar{N}}(N + 12) + B_{\bar{N}}(42) = 21 + (N + 9) + 42 = \mathbf{N} + \mathbf{72} \\
&(N \geq 42)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + \mathbf{73}) &= B_{\bar{N}}(2N + 73 - B_{\bar{N}}(2N + 72)) + B_{\bar{N}}(2N + 73 - B_{\bar{N}}(2N + 71)) + B_{\bar{N}}(2N + 73 - B_{\bar{N}}(2N + 70)) \\
&= B_{\bar{N}}(2N + 73 - (N + 72)) + B_{\bar{N}}(2N + 73 - (N + 49)) + B_{\bar{N}}(2N + 73 - (N + 60)) \\
&= B_{\bar{N}}(N + 1) + B_{\bar{N}}(N + 24) + B_{\bar{N}}(N + 13) = 6 + (2N + 11) + 15 = \mathbf{2N} + \mathbf{32} \\
&(N \geq 1)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + \mathbf{74}) &= B_{\bar{N}}(2N + 74 - B_{\bar{N}}(2N + 73)) + B_{\bar{N}}(2N + 74 - B_{\bar{N}}(2N + 72)) + B_{\bar{N}}(2N + 74 - B_{\bar{N}}(2N + 71)) \\
&= B_{\bar{N}}(2N + 74 - (2N + 32)) + B_{\bar{N}}(2N + 74 - (N + 72)) + B_{\bar{N}}(2N + 74 - (N + 49)) \\
&= B_{\bar{N}}(42) + B_{\bar{N}}(N + 2) + B_{\bar{N}}(N + 25) = 42 + (N + 1) + (2N + 5) = \mathbf{3N} + \mathbf{48} \\
&(N \geq 42)
\end{aligned}$$



$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + \mathbf{75}) &= B_{\bar{N}}(2N + 75 - B_{\bar{N}}(2N + 74)) + B_{\bar{N}}(2N + 75 - B_{\bar{N}}(2N + 73)) + B_{\bar{N}}(2N + 75 - B_{\bar{N}}(2N + 72)) \\
&= B_{\bar{N}}(2N + 75 - (3N + 48)) + B_{\bar{N}}(2N + 75 - (2N + 32)) + B_{\bar{N}}(2N + 75 - (N + 72)) \\
&= B_{\bar{N}}(-N + 27) + B_{\bar{N}}(43) + B_{\bar{N}}(N + 3) = 0 + 43 + (N + 2) = \mathbf{N} + \mathbf{45} \\
&(N \geq 43)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + \mathbf{76}) &= B_{\bar{N}}(2N + 76 - B_{\bar{N}}(2N + 75)) + B_{\bar{N}}(2N + 76 - B_{\bar{N}}(2N + 74)) + B_{\bar{N}}(2N + 76 - B_{\bar{N}}(2N + 73)) \\
&= B_{\bar{N}}(2N + 76 - (N + 45)) + B_{\bar{N}}(2N + 76 - (3N + 48)) + B_{\bar{N}}(2N + 76 - (2N + 32)) \\
&= B_{\bar{N}}(N + 31) + B_{\bar{N}}(-N + 28) + B_{\bar{N}}(44) = 22 + 0 + 44 = \mathbf{66} \\
&(N \geq 44)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + \mathbf{77}) &= B_{\bar{N}}(2N + 77 - B_{\bar{N}}(2N + 76)) + B_{\bar{N}}(2N + 77 - B_{\bar{N}}(2N + 75)) + B_{\bar{N}}(2N + 77 - B_{\bar{N}}(2N + 74)) \\
&= B_{\bar{N}}(2N + 77 - 66) + B_{\bar{N}}(2N + 77 - (N + 45)) + B_{\bar{N}}(2N + 77 - (3N + 48)) \\
&= B_{\bar{N}}(2N + 11) + B_{\bar{N}}(N + 32) + B_{\bar{N}}(-N + 29) = (2N + 1) + (N + 30) + 0 = \mathbf{3N} + \mathbf{31} \\
&(N \geq 29)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + \mathbf{78}) &= B_{\bar{N}}(2N + 78 - B_{\bar{N}}(2N + 77)) + B_{\bar{N}}(2N + 78 - B_{\bar{N}}(2N + 76)) + B_{\bar{N}}(2N + 78 - B_{\bar{N}}(2N + 75)) \\
&= B_{\bar{N}}(2N + 78 - (3N + 31)) + B_{\bar{N}}(2N + 78 - 66) + B_{\bar{N}}(2N + 78 - (N + 45)) \\
&= B_{\bar{N}}(-N + 47) + B_{\bar{N}}(2N + 12) + B_{\bar{N}}(N + 33) = 0 + (2N + 5) + (N + 35) = \mathbf{3N} + \mathbf{40} \\
&(N \geq 47)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + \mathbf{79}) &= B_{\bar{N}}(2N + 79 - B_{\bar{N}}(2N + 78)) + B_{\bar{N}}(2N + 79 - B_{\bar{N}}(2N + 77)) + B_{\bar{N}}(2N + 79 - B_{\bar{N}}(2N + 76)) \\
&= B_{\bar{N}}(2N + 79 - (3N + 40)) + B_{\bar{N}}(2N + 79 - (3N + 31)) + B_{\bar{N}}(2N + 79 - 66) \\
&= B_{\bar{N}}(-N + 39) + B_{\bar{N}}(-N + 48) + B_{\bar{N}}(2N + 13) = 0 + 0 + (N + 17) = \mathbf{N} + \mathbf{17} \\
&(N \geq 48)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 80) &= B_{\bar{N}}(2N + 80 - B_{\bar{N}}(2N + 79)) + B_{\bar{N}}(2N + 80 - B_{\bar{N}}(2N + 78)) + B_{\bar{N}}(2N + 80 - B_{\bar{N}}(2N + 77)) \\
&= B_{\bar{N}}(2N + 80 - (N + 17)) + B_{\bar{N}}(2N + 80 - (3N + 40)) + B_{\bar{N}}(2N + 80 - (3N + 31)) \\
&= B_{\bar{N}}(N + 63) + B_{\bar{N}}(-N + 40) + B_{\bar{N}}(-N + 49) = (2N + 14) + 0 + 0 = \mathbf{2N} + \mathbf{14} \\
&(N \geq 49)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 81) &= B_{\bar{N}}(2N + 81 - B_{\bar{N}}(2N + 80)) + B_{\bar{N}}(2N + 81 - B_{\bar{N}}(2N + 79)) + B_{\bar{N}}(2N + 81 - B_{\bar{N}}(2N + 78)) \\
&= B_{\bar{N}}(2N + 81 - (2N + 14)) + B_{\bar{N}}(2N + 81 - (N + 17)) + B_{\bar{N}}(2N + 81 - (3N + 40)) \\
&= B_{\bar{N}}(67) + B_{\bar{N}}(N + 64) + B_{\bar{N}}(-N + 41) = 67 + (N + 4) + 0 = \mathbf{N} + \mathbf{71} \\
&(N \geq 67)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 82) &= B_{\bar{N}}(2N + 82 - B_{\bar{N}}(2N + 81)) + B_{\bar{N}}(2N + 82 - B_{\bar{N}}(2N + 80)) + B_{\bar{N}}(2N + 82 - B_{\bar{N}}(2N + 79)) \\
&= B_{\bar{N}}(2N + 82 - (N + 71)) + B_{\bar{N}}(2N + 82 - (2N + 14)) + B_{\bar{N}}(2N + 82 - (N + 17)) \\
&= B_{\bar{N}}(N + 11) + B_{\bar{N}}(68) + B_{\bar{N}}(N + 65) = (N + 8) + 68 + 61 = \mathbf{N} + \mathbf{137} \\
&(N \geq 68)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 83) &= B_{\bar{N}}(2N + 83 - B_{\bar{N}}(2N + 82)) + B_{\bar{N}}(2N + 83 - B_{\bar{N}}(2N + 81)) + B_{\bar{N}}(2N + 83 - B_{\bar{N}}(2N + 80)) \\
&= B_{\bar{N}}(2N + 83 - (N + 137)) + B_{\bar{N}}(2N + 83 - (N + 71)) + B_{\bar{N}}(2N + 83 - (2N + 14)) \\
&= B_{\bar{N}}(N - 54) + B_{\bar{N}}(N + 12) + B_{\bar{N}}(69) = (N - 54) + (N + 9) + 69 = \mathbf{2N} + \mathbf{24} \\
&(N \geq 69)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 84) &= B_{\bar{N}}(2N + 84 - B_{\bar{N}}(2N + 83)) + B_{\bar{N}}(2N + 84 - B_{\bar{N}}(2N + 82)) + B_{\bar{N}}(2N + 84 - B_{\bar{N}}(2N + 81)) \\
&= B_{\bar{N}}(2N + 84 - (2N + 24)) + B_{\bar{N}}(2N + 84 - (N + 137)) + B_{\bar{N}}(2N + 84 - (N + 71)) \\
&= B_{\bar{N}}(60) + B_{\bar{N}}(N - 53) + B_{\bar{N}}(N + 13) = 60 + (N - 53) + 15 = \mathbf{N} + \mathbf{22} \\
&(N \geq 60)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 85) &= B_{\bar{N}}(2N + 85 - B_{\bar{N}}(2N + 84)) + B_{\bar{N}}(2N + 85 - B_{\bar{N}}(2N + 83)) + B_{\bar{N}}(2N + 85 - B_{\bar{N}}(2N + 82)) \\
&= B_{\bar{N}}(2N + 85 - (N + 22)) + B_{\bar{N}}(2N + 85 - (2N + 24)) + B_{\bar{N}}(2N + 85 - (N + 137)) \\
&= B_{\bar{N}}(N + 63) + B_{\bar{N}}(61) + B_{\bar{N}}(N - 52) = (2N + 14) + 61 + (N - 52) = \mathbf{3N} + \mathbf{23} \\
&(N \geq 61)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 86) &= B_{\bar{N}}(2N + 86 - B_{\bar{N}}(2N + 85)) + B_{\bar{N}}(2N + 86 - B_{\bar{N}}(2N + 84)) + B_{\bar{N}}(2N + 86 - B_{\bar{N}}(2N + 83)) \\
&= B_{\bar{N}}(2N + 86 - (3N + 23)) + B_{\bar{N}}(2N + 86 - (N + 22)) + B_{\bar{N}}(2N + 86 - (2N + 24)) \\
&= B_{\bar{N}}(-N + 63) + B_{\bar{N}}(N + 64) + B_{\bar{N}}(62) = 0 + (N + 4) + 62 = \mathbf{N} + \mathbf{66} \\
&(N \geq 63)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 87) &= B_{\bar{N}}(2N + 87 - B_{\bar{N}}(2N + 86)) + B_{\bar{N}}(2N + 87 - B_{\bar{N}}(2N + 85)) + B_{\bar{N}}(2N + 87 - B_{\bar{N}}(2N + 84)) \\
&= B_{\bar{N}}(2N + 87 - (N + 66)) + B_{\bar{N}}(2N + 87 - (3N + 23)) + B_{\bar{N}}(2N + 87 - (N + 22)) \\
&= B_{\bar{N}}(N + 21) + B_{\bar{N}}(-N + 64) + B_{\bar{N}}(N + 65) = (N + 16) + 0 + 61 = \mathbf{N} + \mathbf{77} \\
&(N \geq 64)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 88) &= B_{\bar{N}}(2N + 88 - B_{\bar{N}}(2N + 87)) + B_{\bar{N}}(2N + 88 - B_{\bar{N}}(2N + 86)) + B_{\bar{N}}(2N + 88 - B_{\bar{N}}(2N + 85)) \\
&= B_{\bar{N}}(2N + 88 - (N + 77)) + B_{\bar{N}}(2N + 88 - (N + 66)) + B_{\bar{N}}(2N + 88 - (3N + 23)) \\
&= B_{\bar{N}}(N + 11) + B_{\bar{N}}(N + 22) + B_{\bar{N}}(-N + 65) = (N + 8) + 22 + 0 = \mathbf{N} + \mathbf{30} \\
&(N \geq 65)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 89) &= B_{\bar{N}}(2N + 89 - B_{\bar{N}}(2N + 88)) + B_{\bar{N}}(2N + 89 - B_{\bar{N}}(2N + 87)) + B_{\bar{N}}(2N + 89 - B_{\bar{N}}(2N + 86)) \\
&= B_{\bar{N}}(2N + 89 - (N + 30)) + B_{\bar{N}}(2N + 89 - (N + 77)) + B_{\bar{N}}(2N + 89 - (N + 66)) \\
&= B_{\bar{N}}(N + 59) + B_{\bar{N}}(N + 12) + B_{\bar{N}}(N + 23) = 25 + (N + 9) + 21 = \mathbf{N} + \mathbf{55} \\
&(N \geq 1)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 90) &= B_{\bar{N}}(2N + 90 - B_{\bar{N}}(2N + 89)) + B_{\bar{N}}(2N + 90 - B_{\bar{N}}(2N + 88)) + B_{\bar{N}}(2N + 90 - B_{\bar{N}}(2N + 87)) \\
&= B_{\bar{N}}(2N + 90 - (N + 55)) + B_{\bar{N}}(2N + 90 - (N + 30)) + B_{\bar{N}}(2N + 90 - (N + 77)) \\
&= B_{\bar{N}}(N + 35) + B_{\bar{N}}(N + 60) + B_{\bar{N}}(N + 13) = 27 + 38 + 15 = \mathbf{80} \\
&(N \geq 1)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 91) &= B_{\bar{N}}(2N + 91 - B_{\bar{N}}(2N + 90)) + B_{\bar{N}}(2N + 91 - B_{\bar{N}}(2N + 89)) + B_{\bar{N}}(2N + 91 - B_{\bar{N}}(2N + 88)) \\
&= B_{\bar{N}}(2N + 91 - 80) + B_{\bar{N}}(2N + 91 - (N + 55)) + B_{\bar{N}}(2N + 91 - (N + 30)) \\
&= B_{\bar{N}}(2N + 11) + B_{\bar{N}}(N + 36) + B_{\bar{N}}(N + 61) = (2N + 1) + 36 + 58 = \mathbf{2N} + \mathbf{95} \\
&(N \geq 1)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 92) &= B_{\bar{N}}(2N + 92 - B_{\bar{N}}(2N + 91)) + B_{\bar{N}}(2N + 92 - B_{\bar{N}}(2N + 90)) + B_{\bar{N}}(2N + 92 - B_{\bar{N}}(2N + 89)) \\
&= B_{\bar{N}}(2N + 92 - (2N + 95)) + B_{\bar{N}}(2N + 92 - 80) + B_{\bar{N}}(2N + 92 - (N + 55)) \\
&= B_{\bar{N}}(-3) + B_{\bar{N}}(2N + 12) + B_{\bar{N}}(N + 37) = 0 + (2N + 5) + (N + 37) = \mathbf{3N} + \mathbf{42} \\
&(N \geq 1)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 93) &= B_{\bar{N}}(2N + 93 - B_{\bar{N}}(2N + 92)) + B_{\bar{N}}(2N + 93 - B_{\bar{N}}(2N + 91)) + B_{\bar{N}}(2N + 93 - B_{\bar{N}}(2N + 90)) \\
&= B_{\bar{N}}(2N + 93 - (3N + 42)) + B_{\bar{N}}(2N + 93 - (2N + 95)) + B_{\bar{N}}(2N + 93 - 80) \\
&= B_{\bar{N}}(-N + 51) + B_{\bar{N}}(-2) + B_{\bar{N}}(2N + 13) = 0 + 0 + (N + 17) = \mathbf{N} + \mathbf{17} \\
&(N \geq 51)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 94) &= B_{\bar{N}}(2N + 94 - B_{\bar{N}}(2N + 93)) + B_{\bar{N}}(2N + 94 - B_{\bar{N}}(2N + 92)) + B_{\bar{N}}(2N + 94 - B_{\bar{N}}(2N + 91)) \\
&= B_{\bar{N}}(2N + 94 - (N + 17)) + B_{\bar{N}}(2N + 94 - (3N + 42)) + B_{\bar{N}}(2N + 94 - (2N + 95)) \\
&= B_{\bar{N}}(N + 77) + B_{\bar{N}}(-N + 52) + B_{\bar{N}}(-1) = 79 + 0 + 0 = \mathbf{79} \\
&(N \geq 52)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 95) &= B_{\bar{N}}(2N + 95 - B_{\bar{N}}(2N + 94)) + B_{\bar{N}}(2N + 95 - B_{\bar{N}}(2N + 93)) + B_{\bar{N}}(2N + 95 - B_{\bar{N}}(2N + 92)) \\
&= B_{\bar{N}}(2N + 95 - 79) + B_{\bar{N}}(2N + 95 - (N + 17)) + B_{\bar{N}}(2N + 95 - (3N + 42)) \\
&= B_{\bar{N}}(2N + 16) + B_{\bar{N}}(N + 78) + B_{\bar{N}}(-N + 53) = (2N + 8) + (N + 79) + 0 = \mathbf{3N} + \mathbf{87} \\
&(N \geq 53)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 96) &= B_{\bar{N}}(2N + 96 - B_{\bar{N}}(2N + 95)) + B_{\bar{N}}(2N + 96 - B_{\bar{N}}(2N + 94)) + B_{\bar{N}}(2N + 96 - B_{\bar{N}}(2N + 93)) \\
&= B_{\bar{N}}(2N + 96 - (3N + 87)) + B_{\bar{N}}(2N + 96 - 79) + B_{\bar{N}}(2N + 96 - (N + 17)) \\
&= B_{\bar{N}}(-N + 9) + B_{\bar{N}}(2N + 17) + B_{\bar{N}}(N + 79) = 0 + (N + 20) + (N + 81) = \mathbf{2N} + \mathbf{101} \\
&(N \geq 9)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 97) &= B_{\bar{N}}(2N + 97 - B_{\bar{N}}(2N + 96)) + B_{\bar{N}}(2N + 97 - B_{\bar{N}}(2N + 95)) + B_{\bar{N}}(2N + 97 - B_{\bar{N}}(2N + 94)) \\
&= B_{\bar{N}}(2N + 97 - (2N + 101)) + B_{\bar{N}}(2N + 97 - (3N + 87)) + B_{\bar{N}}(2N + 97 - 79) \\
&= B_{\bar{N}}(-4) + B_{\bar{N}}(-N + 10) + B_{\bar{N}}(2N + 18) = 0 + 0 + (N + 22) = \mathbf{N} + \mathbf{22} \\
&(N \geq 10)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 98) &= B_{\bar{N}}(2N + 98 - B_{\bar{N}}(2N + 97)) + B_{\bar{N}}(2N + 98 - B_{\bar{N}}(2N + 96)) + B_{\bar{N}}(2N + 98 - B_{\bar{N}}(2N + 95)) \\
&= B_{\bar{N}}(2N + 98 - (N + 22)) + B_{\bar{N}}(2N + 98 - (2N + 101)) + B_{\bar{N}}(2N + 98 - (3N + 87)) \\
&= B_{\bar{N}}(N + 76) + B_{\bar{N}}(-3) + B_{\bar{N}}(-N + 11) = (N - 2) + 0 + 0 = \mathbf{N} - \mathbf{2} \\
&(N \geq 11)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 99) &= B_{\bar{N}}(2N + 99 - B_{\bar{N}}(2N + 98)) + B_{\bar{N}}(2N + 99 - B_{\bar{N}}(2N + 97)) + B_{\bar{N}}(2N + 99 - B_{\bar{N}}(2N + 96)) \\
&= B_{\bar{N}}(2N + 99 - (N - 2)) + B_{\bar{N}}(2N + 99 - (N + 22)) + B_{\bar{N}}(2N + 99 - (2N + 101)) \\
&= B_{\bar{N}}(N + 101) + B_{\bar{N}}(N + 77) + B_{\bar{N}}(-2) = 7 + 79 + 0 = \mathbf{86} \\
&(N \geq 1)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 100) &= B_{\bar{N}}(2N + 100 - B_{\bar{N}}(2N + 99)) + B_{\bar{N}}(2N + 100 - B_{\bar{N}}(2N + 98)) + B_{\bar{N}}(2N + 100 - B_{\bar{N}}(2N + 97)) \\
&= B_{\bar{N}}(2N + 100 - 86) + B_{\bar{N}}(2N + 100 - (N - 2)) + B_{\bar{N}}(2N + 100 - (N + 22)) \\
&= B_{\bar{N}}(2N + 14) + B_{\bar{N}}(N + 102) + B_{\bar{N}}(N + 78) = (N + 19) + (2N + 73) + (N + 79) = \mathbf{4N} + \mathbf{171} \\
&(N \geq 1)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 101) &= B_{\bar{N}}(2N + 101 - B_{\bar{N}}(2N + 100)) + B_{\bar{N}}(2N + 101 - B_{\bar{N}}(2N + 99)) + B_{\bar{N}}(2N + 101 - B_{\bar{N}}(2N + 98)) \\
&= B_{\bar{N}}(2N + 101 - (4N + 171)) + B_{\bar{N}}(2N + 101 - 86) + B_{\bar{N}}(2N + 101 - (N - 2)) \\
&= B_{\bar{N}}(-2N - 70) + B_{\bar{N}}(2N + 15) + B_{\bar{N}}(N + 103) = 0 + (2N + 4) + (2N + 7) = \mathbf{4N} + \mathbf{11} \\
&(N \geq 1)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 102) &= B_{\bar{N}}(2N + 102 - B_{\bar{N}}(2N + 101)) + B_{\bar{N}}(2N + 102 - B_{\bar{N}}(2N + 100)) + B_{\bar{N}}(2N + 102 - B_{\bar{N}}(2N + 99)) \\
&= B_{\bar{N}}(2N + 102 - (4N + 11)) + B_{\bar{N}}(2N + 102 - (4N + 171)) + B_{\bar{N}}(2N + 102 - 86) \\
&= B_{\bar{N}}(-2N + 91) + B_{\bar{N}}(-2N - 69) + B_{\bar{N}}(2N + 16) = 0 + 0 + (2N + 8) = \mathbf{2N} + \mathbf{8} \\
&(N \geq 46)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 103) &= B_{\bar{N}}(2N + 103 - B_{\bar{N}}(2N + 102)) + B_{\bar{N}}(2N + 103 - B_{\bar{N}}(2N + 101)) + B_{\bar{N}}(2N + 103 - B_{\bar{N}}(2N + 100)) \\
&= B_{\bar{N}}(2N + 103 - (2N + 8)) + B_{\bar{N}}(2N + 103 - (4N + 11)) + B_{\bar{N}}(2N + 103 - (4N + 171)) \\
&= B_{\bar{N}}(95) + B_{\bar{N}}(-2N + 92) + B_{\bar{N}}(-2N - 68) = 95 + 0 + 0 = \mathbf{95} \\
&(N \geq 95)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 104) &= B_{\bar{N}}(2N + 104 - B_{\bar{N}}(2N + 103)) + B_{\bar{N}}(2N + 104 - B_{\bar{N}}(2N + 102)) + B_{\bar{N}}(2N + 104 - B_{\bar{N}}(2N + 101)) \\
&= B_{\bar{N}}(2N + 104 - 95) + B_{\bar{N}}(2N + 104 - (2N + 8)) + B_{\bar{N}}(2N + 104 - (4N + 11)) \\
&= B_{\bar{N}}(2N + 9) + B_{\bar{N}}(96) + B_{\bar{N}}(-2N + 93) = (N + 14) + 96 + 0 = \mathbf{N} + \mathbf{110} \\
&(N \geq 96)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 105) &= B_{\bar{N}}(2N + 105 - B_{\bar{N}}(2N + 104)) + B_{\bar{N}}(2N + 105 - B_{\bar{N}}(2N + 103)) + B_{\bar{N}}(2N + 105 - B_{\bar{N}}(2N + 102)) \\
&= B_{\bar{N}}(2N + 105 - (N + 110)) + B_{\bar{N}}(2N + 105 - 95) + B_{\bar{N}}(2N + 105 - (2N + 8)) \\
&= B_{\bar{N}}(N - 5) + B_{\bar{N}}(2N + 10) + B_{\bar{N}}(97) = (N - 5) + (N + 16) + 97 = \mathbf{2N} + \mathbf{108} \\
&(N \geq 97)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 106) &= B_{\bar{N}}(2N + 106 - B_{\bar{N}}(2N + 105)) + B_{\bar{N}}(2N + 106 - B_{\bar{N}}(2N + 104)) + B_{\bar{N}}(2N + 106 - B_{\bar{N}}(2N + 103)) \\
&= B_{\bar{N}}(2N + 106 - (2N + 108)) + B_{\bar{N}}(2N + 106 - (N + 110)) + B_{\bar{N}}(2N + 106 - 95) \\
&= B_{\bar{N}}(-2) + B_{\bar{N}}(N - 4) + B_{\bar{N}}(2N + 11) = 0 + (N - 4) + (2N + 1) = \mathbf{3N} - \mathbf{3} \\
&(N \geq 5)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 107) &= B_{\bar{N}}(2N + 107 - B_{\bar{N}}(2N + 106)) + B_{\bar{N}}(2N + 107 - B_{\bar{N}}(2N + 105)) + B_{\bar{N}}(2N + 107 - B_{\bar{N}}(2N + 104)) \\
&= B_{\bar{N}}(2N + 107 - (3N - 3)) + B_{\bar{N}}(2N + 107 - (2N + 108)) + B_{\bar{N}}(2N + 107 - (N + 110)) \\
&= B_{\bar{N}}(-N + 110) + B_{\bar{N}}(-1) + B_{\bar{N}}(N - 3) = 0 + 0 + (N - 3) = \mathbf{N} - \mathbf{3} \\
&(N \geq 110)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 108) &= B_{\bar{N}}(2N + 108 - B_{\bar{N}}(2N + 107)) + B_{\bar{N}}(2N + 108 - B_{\bar{N}}(2N + 106)) + B_{\bar{N}}(2N + 108 - B_{\bar{N}}(2N + 105)) \\
&= B_{\bar{N}}(2N + 108 - (N - 3)) + B_{\bar{N}}(2N + 108 - (3N - 3)) + B_{\bar{N}}(2N + 108 - (2N + 108)) \\
&= B_{\bar{N}}(N + 111) + B_{\bar{N}}(-N + 111) + B_{\bar{N}}(0) = (N - 2) + 0 + 0 = \mathbf{N} - \mathbf{2} \\
&(N \geq 111)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 109) &= B_{\bar{N}}(2N + 109 - B_{\bar{N}}(2N + 108)) + B_{\bar{N}}(2N + 109 - B_{\bar{N}}(2N + 107)) + B_{\bar{N}}(2N + 109 - B_{\bar{N}}(2N + 106)) \\
&= B_{\bar{N}}(2N + 109 - (N - 2)) + B_{\bar{N}}(2N + 109 - (N - 3)) + B_{\bar{N}}(2N + 109 - (3N - 3)) \\
&= B_{\bar{N}}(N + 111) + B_{\bar{N}}(N + 112) + B_{\bar{N}}(-N + 112) = (N - 2) + 114 + 0 = \mathbf{N} + \mathbf{112} \\
&(N \geq 112)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(\mathbf{2N} + \mathbf{110}) &= B_{\bar{N}}(2N + 110 - B_{\bar{N}}(2N + 109)) + B_{\bar{N}}(2N + 110 - B_{\bar{N}}(2N + 108)) + B_{\bar{N}}(2N + 110 - B_{\bar{N}}(2N + 107)) \\
&= B_{\bar{N}}(2N + 110 - (N + 112)) + B_{\bar{N}}(2N + 110 - (N - 2)) + B_{\bar{N}}(2N + 110 - (N - 3)) \\
&= B_{\bar{N}}(N - 2) + B_{\bar{N}}(N + 112) + B_{\bar{N}}(N + 113) = (N - 2) + 114 + (N + 114) = \mathbf{2N} + \mathbf{226} \\
&(N \geq 3)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(\mathbf{2N} + \mathbf{111}) &= B_{\bar{N}}(2N + 111 - B_{\bar{N}}(2N + 110)) + B_{\bar{N}}(2N + 111 - B_{\bar{N}}(2N + 109)) + B_{\bar{N}}(2N + 111 - B_{\bar{N}}(2N + 108)) \\
&= B_{\bar{N}}(2N + 111 - (2N + 226)) + B_{\bar{N}}(2N + 111 - (N + 112)) + B_{\bar{N}}(2N + 111 - (N - 2)) \\
&= B_{\bar{N}}(-115) + B_{\bar{N}}(N - 1) + B_{\bar{N}}(N + 113) = 0 + (N - 1) + (N + 114) = \mathbf{2N} + \mathbf{113} \\
&(N \geq 2)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(\mathbf{2N} + \mathbf{112}) &= B_{\bar{N}}(2N + 112 - B_{\bar{N}}(2N + 111)) + B_{\bar{N}}(2N + 112 - B_{\bar{N}}(2N + 110)) + B_{\bar{N}}(2N + 112 - B_{\bar{N}}(2N + 109)) \\
&= B_{\bar{N}}(2N + 112 - (2N + 113)) + B_{\bar{N}}(2N + 112 - (2N + 226)) + B_{\bar{N}}(2N + 112 - (N + 112)) \\
&= B_{\bar{N}}(-1) + B_{\bar{N}}(-114) + B_{\bar{N}}(N) = 0 + 0 + N = \mathbf{N} \\
&(N \geq 1)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(\mathbf{2N} + \mathbf{113}) &= B_{\bar{N}}(2N + 113 - B_{\bar{N}}(2N + 112)) + B_{\bar{N}}(2N + 113 - B_{\bar{N}}(2N + 111)) + B_{\bar{N}}(2N + 113 - B_{\bar{N}}(2N + 110)) \\
&= B_{\bar{N}}(2N + 113 - N) + B_{\bar{N}}(2N + 113 - (2N + 113)) + B_{\bar{N}}(2N + 113 - (2N + 226)) \\
&= B_{\bar{N}}(N + 113) + B_{\bar{N}}(0) + B_{\bar{N}}(-113) = (N + 114) + 0 + 0 = \mathbf{N} + \mathbf{114} \\
&(N \geq 1)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(\mathbf{2N} + \mathbf{114}) &= B_{\bar{N}}(2N + 114 - B_{\bar{N}}(2N + 113)) + B_{\bar{N}}(2N + 114 - B_{\bar{N}}(2N + 112)) + B_{\bar{N}}(2N + 114 - B_{\bar{N}}(2N + 111)) \\
&= B_{\bar{N}}(2N + 114 - (N + 114)) + B_{\bar{N}}(2N + 114 - N) + B_{\bar{N}}(2N + 114 - (2N + 113)) \\
&= B_{\bar{N}}(N) + B_{\bar{N}}(N + 114) + B_{\bar{N}}(1) = N + (N + 116) + 1 = \mathbf{2N} + \mathbf{117} \\
&(N \geq 1)
\end{aligned}$$



$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 115) &= B_{\bar{N}}(2N + 115 - B_{\bar{N}}(2N + 114)) + B_{\bar{N}}(2N + 115 - B_{\bar{N}}(2N + 113)) + B_{\bar{N}}(2N + 115 - B_{\bar{N}}(2N + 112)) \\
&= B_{\bar{N}}(2N + 115 - (2N + 117)) + B_{\bar{N}}(2N + 115 - (N + 114)) + B_{\bar{N}}(2N + 115 - N) \\
&= B_{\bar{N}}(-2) + B_{\bar{N}}(N + 1) + B_{\bar{N}}(N + 115) = 0 + 6 + 7 = \mathbf{13} \\
&(N \geq 1)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 116) &= B_{\bar{N}}(2N + 116 - B_{\bar{N}}(2N + 115)) + B_{\bar{N}}(2N + 116 - B_{\bar{N}}(2N + 114)) + B_{\bar{N}}(2N + 116 - B_{\bar{N}}(2N + 113)) \\
&= B_{\bar{N}}(2N + 116 - 13) + B_{\bar{N}}(2N + 116 - (2N + 117)) + B_{\bar{N}}(2N + 116 - (N + 114)) \\
&= B_{\bar{N}}(2N + 103) + B_{\bar{N}}(-1) + B_{\bar{N}}(N + 2) = 95 + 0 + (N + 1) = \mathbf{N} + \mathbf{96} \\
&(N \geq 1)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 117) &= B_{\bar{N}}(2N + 117 - B_{\bar{N}}(2N + 116)) + B_{\bar{N}}(2N + 117 - B_{\bar{N}}(2N + 115)) + B_{\bar{N}}(2N + 117 - B_{\bar{N}}(2N + 114)) \\
&= B_{\bar{N}}(2N + 117 - (N + 96)) + B_{\bar{N}}(2N + 117 - 13) + B_{\bar{N}}(2N + 117 - (2N + 117)) \\
&= B_{\bar{N}}(N + 21) + B_{\bar{N}}(2N + 104) + B_{\bar{N}}(0) = (N + 16) + (N + 110) + 0 = \mathbf{2N} + \mathbf{126} \\
&(N \geq 1)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 118) &= B_{\bar{N}}(2N + 118 - B_{\bar{N}}(2N + 117)) + B_{\bar{N}}(2N + 118 - B_{\bar{N}}(2N + 116)) + B_{\bar{N}}(2N + 118 - B_{\bar{N}}(2N + 115)) \\
&= B_{\bar{N}}(2N + 118 - (2N + 126)) + B_{\bar{N}}(2N + 118 - (N + 96)) + B_{\bar{N}}(2N + 118 - 13) \\
&= B_{\bar{N}}(-8) + B_{\bar{N}}(N + 22) + B_{\bar{N}}(2N + 105) = 0 + 22 + (2N + 108) = \mathbf{2N} + \mathbf{130} \\
&(N \geq 1)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 119) &= B_{\bar{N}}(2N + 119 - B_{\bar{N}}(2N + 118)) + B_{\bar{N}}(2N + 119 - B_{\bar{N}}(2N + 117)) + B_{\bar{N}}(2N + 119 - B_{\bar{N}}(2N + 116)) \\
&= B_{\bar{N}}(2N + 119 - (2N + 130)) + B_{\bar{N}}(2N + 119 - (2N + 126)) + B_{\bar{N}}(2N + 119 - (N + 96)) \\
&= B_{\bar{N}}(-11) + B_{\bar{N}}(-7) + B_{\bar{N}}(N + 23) = 0 + 0 + 21 = \mathbf{21} \\
&(N \geq 1)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 120) &= B_{\bar{N}}(2N + 120 - B_{\bar{N}}(2N + 119)) + B_{\bar{N}}(2N + 120 - B_{\bar{N}}(2N + 118)) + B_{\bar{N}}(2N + 120 - B_{\bar{N}}(2N + 117)) \\
&= B_{\bar{N}}(2N + 120 - 21) + B_{\bar{N}}(2N + 120 - (2N + 130)) + B_{\bar{N}}(2N + 120 - (2N + 126)) \\
&= B_{\bar{N}}(2N + 99) + B_{\bar{N}}(-10) + B_{\bar{N}}(-6) = 86 + 0 + 0 = \mathbf{86} \\
&(N \geq 1)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 121) &= B_{\bar{N}}(2N + 121 - B_{\bar{N}}(2N + 120)) + B_{\bar{N}}(2N + 121 - B_{\bar{N}}(2N + 119)) + B_{\bar{N}}(2N + 121 - B_{\bar{N}}(2N + 118)) \\
&= B_{\bar{N}}(2N + 121 - 86) + B_{\bar{N}}(2N + 121 - 21) + B_{\bar{N}}(2N + 121 - (2N + 130)) \\
&= B_{\bar{N}}(2N + 35) + B_{\bar{N}}(2N + 100) + B_{\bar{N}}(-9) = (N + 39) + (4N + 171) + 0 = \mathbf{5N + 210} \\
&(N \geq 1)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 122) &= B_{\bar{N}}(2N + 122 - B_{\bar{N}}(2N + 121)) + B_{\bar{N}}(2N + 122 - B_{\bar{N}}(2N + 120)) + B_{\bar{N}}(2N + 122 - B_{\bar{N}}(2N + 119)) \\
&= B_{\bar{N}}(2N + 122 - (5N + 210)) + B_{\bar{N}}(2N + 122 - 86) + B_{\bar{N}}(2N + 122 - 21) \\
&= B_{\bar{N}}(-3N - 88) + B_{\bar{N}}(2N + 36) + B_{\bar{N}}(2N + 101) = 0 + (4N + 15) + (4N + 11) = \mathbf{8N + 26} \\
&(N \geq 1)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 123) &= B_{\bar{N}}(2N + 123 - B_{\bar{N}}(2N + 122)) + B_{\bar{N}}(2N + 123 - B_{\bar{N}}(2N + 121)) + B_{\bar{N}}(2N + 123 - B_{\bar{N}}(2N + 120)) \\
&= B_{\bar{N}}(2N + 123 - (8N + 26)) + B_{\bar{N}}(2N + 123 - (5N + 210)) + B_{\bar{N}}(2N + 123 - 86) \\
&= B_{\bar{N}}(-6N + 97) + B_{\bar{N}}(-3N - 87) + B_{\bar{N}}(2N + 37) = 0 + 0 + (2N + 7) = \mathbf{2N + 7} \\
&(N \geq 17)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 124) &= B_{\bar{N}}(2N + 124 - B_{\bar{N}}(2N + 123)) + B_{\bar{N}}(2N + 124 - B_{\bar{N}}(2N + 122)) + B_{\bar{N}}(2N + 124 - B_{\bar{N}}(2N + 121)) \\
&= B_{\bar{N}}(2N + 124 - (2N + 7)) + B_{\bar{N}}(2N + 124 - (8N + 26)) + B_{\bar{N}}(2N + 124 - (5N + 210)) \\
&= B_{\bar{N}}(117) + B_{\bar{N}}(-6N + 98) + B_{\bar{N}}(-3N - 86) = 117 + 0 + 0 = \mathbf{117} \\
&(N \geq 117)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(\mathbf{2N} + \mathbf{125}) &= B_{\bar{N}}(2N + 125 - B_{\bar{N}}(2N + 124)) + B_{\bar{N}}(2N + 125 - B_{\bar{N}}(2N + 123)) + B_{\bar{N}}(2N + 125 - B_{\bar{N}}(2N + 122)) \\
&= B_{\bar{N}}(2N + 125 - 117) + B_{\bar{N}}(2N + 125 - (2N + 7)) + B_{\bar{N}}(2N + 125 - (8N + 26)) \\
&= B_{\bar{N}}(2N + 8) + B_{\bar{N}}(118) + B_{\bar{N}}(-6N + 99) = (2N + 2) + 118 + 0 = \mathbf{2N} + \mathbf{120} \\
&(N \geq 118)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(\mathbf{2N} + \mathbf{126}) &= B_{\bar{N}}(2N + 126 - B_{\bar{N}}(2N + 125)) + B_{\bar{N}}(2N + 126 - B_{\bar{N}}(2N + 124)) + B_{\bar{N}}(2N + 126 - B_{\bar{N}}(2N + 123)) \\
&= B_{\bar{N}}(2N + 126 - (2N + 120)) + B_{\bar{N}}(2N + 126 - 117) + B_{\bar{N}}(2N + 126 - (2N + 7)) \\
&= B_{\bar{N}}(6) + B_{\bar{N}}(2N + 9) + B_{\bar{N}}(119) = 6 + (N + 14) + 119 = \mathbf{N} + \mathbf{139} \\
&(N \geq 119)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(\mathbf{2N} + \mathbf{127}) &= B_{\bar{N}}(2N + 127 - B_{\bar{N}}(2N + 126)) + B_{\bar{N}}(2N + 127 - B_{\bar{N}}(2N + 125)) + B_{\bar{N}}(2N + 127 - B_{\bar{N}}(2N + 124)) \\
&= B_{\bar{N}}(2N + 127 - (N + 139)) + B_{\bar{N}}(2N + 127 - (2N + 120)) + B_{\bar{N}}(2N + 127 - 117) \\
&= B_{\bar{N}}(N - 12) + B_{\bar{N}}(7) + B_{\bar{N}}(2N + 10) = (N - 12) + 7 + (N + 16) = \mathbf{2N} + \mathbf{11} \\
&(N \geq 13)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(\mathbf{2N} + \mathbf{128}) &= B_{\bar{N}}(2N + 128 - B_{\bar{N}}(2N + 127)) + B_{\bar{N}}(2N + 128 - B_{\bar{N}}(2N + 126)) + B_{\bar{N}}(2N + 128 - B_{\bar{N}}(2N + 125)) \\
&= B_{\bar{N}}(2N + 128 - (2N + 11)) + B_{\bar{N}}(2N + 128 - (N + 139)) + B_{\bar{N}}(2N + 128 - (2N + 120)) \\
&= B_{\bar{N}}(117) + B_{\bar{N}}(N - 11) + B_{\bar{N}}(8) = 117 + (N - 11) + 8 = \mathbf{N} + \mathbf{114} \\
&(N \geq 117)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(\mathbf{2N} + \mathbf{129}) &= B_{\bar{N}}(2N + 129 - B_{\bar{N}}(2N + 128)) + B_{\bar{N}}(2N + 129 - B_{\bar{N}}(2N + 127)) + B_{\bar{N}}(2N + 129 - B_{\bar{N}}(2N + 126)) \\
&= B_{\bar{N}}(2N + 129 - (N + 114)) + B_{\bar{N}}(2N + 129 - (2N + 11)) + B_{\bar{N}}(2N + 129 - (N + 139)) \\
&= B_{\bar{N}}(N + 15) + B_{\bar{N}}(118) + B_{\bar{N}}(N - 10) = (N + 11) + 118 + (N - 10) = \mathbf{2N} + \mathbf{119} \\
&(N \geq 118)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(\mathbf{2N} + \mathbf{130}) &= B_{\bar{N}}(2N + 130 - B_{\bar{N}}(2N + 129)) + B_{\bar{N}}(2N + 130 - B_{\bar{N}}(2N + 128)) + B_{\bar{N}}(2N + 130 - B_{\bar{N}}(2N + 127)) \\
&= B_{\bar{N}}(2N + 130 - (2N + 119)) + B_{\bar{N}}(2N + 130 - (N + 114)) + B_{\bar{N}}(2N + 130 - (2N + 11)) \\
&= B_{\bar{N}}(11) + B_{\bar{N}}(N + 16) + B_{\bar{N}}(119) = 11 + 17 + 119 = \mathbf{147} \\
&(N \geq 119)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(\mathbf{2N} + \mathbf{131}) &= B_{\bar{N}}(2N + 131 - B_{\bar{N}}(2N + 130)) + B_{\bar{N}}(2N + 131 - B_{\bar{N}}(2N + 129)) + B_{\bar{N}}(2N + 131 - B_{\bar{N}}(2N + 128)) \\
&= B_{\bar{N}}(2N + 131 - 147) + B_{\bar{N}}(2N + 131 - (2N + 119)) + B_{\bar{N}}(2N + 131 - (N + 114)) \\
&= B_{\bar{N}}(2N - 16) + B_{\bar{N}}(12) + B_{\bar{N}}(N + 17) = (N - 2) + 12 + (N + 13) = \mathbf{2N} + \mathbf{23} \\
&(N \geq 83)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(\mathbf{2N} + \mathbf{132}) &= B_{\bar{N}}(2N + 132 - B_{\bar{N}}(2N + 131)) + B_{\bar{N}}(2N + 132 - B_{\bar{N}}(2N + 130)) + B_{\bar{N}}(2N + 132 - B_{\bar{N}}(2N + 129)) \\
&= B_{\bar{N}}(2N + 132 - (2N + 23)) + B_{\bar{N}}(2N + 132 - 147) + B_{\bar{N}}(2N + 132 - (2N + 119)) \\
&= B_{\bar{N}}(109) + B_{\bar{N}}(2N - 15) + B_{\bar{N}}(13) = 109 + (N - 13) + 13 = \mathbf{N} + \mathbf{109} \\
&(N \geq 109)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(\mathbf{2N} + \mathbf{133}) &= B_{\bar{N}}(2N + 133 - B_{\bar{N}}(2N + 132)) + B_{\bar{N}}(2N + 133 - B_{\bar{N}}(2N + 131)) + B_{\bar{N}}(2N + 133 - B_{\bar{N}}(2N + 130)) \\
&= B_{\bar{N}}(2N + 133 - (N + 109)) + B_{\bar{N}}(2N + 133 - (2N + 23)) + B_{\bar{N}}(2N + 133 - 147) \\
&= B_{\bar{N}}(N + 24) + B_{\bar{N}}(110) + B_{\bar{N}}(2N - 14) = (2N + 11) + 110 + (2N - 13) = \mathbf{4N} + \mathbf{108} \\
&(N \geq 110)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(\mathbf{2N} + \mathbf{134}) &= B_{\bar{N}}(2N + 134 - B_{\bar{N}}(2N + 133)) + B_{\bar{N}}(2N + 134 - B_{\bar{N}}(2N + 132)) + B_{\bar{N}}(2N + 134 - B_{\bar{N}}(2N + 131)) \\
&= B_{\bar{N}}(2N + 134 - (4N + 108)) + B_{\bar{N}}(2N + 134 - (N + 109)) + B_{\bar{N}}(2N + 134 - (2N + 23)) \\
&= B_{\bar{N}}(-2N + 26) + B_{\bar{N}}(N + 25) + B_{\bar{N}}(111) = 0 + (2N + 5) + 111 = \mathbf{2N} + \mathbf{116} \\
&(N \geq 111)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 135) &= B_{\bar{N}}(2N + 135 - B_{\bar{N}}(2N + 134)) + B_{\bar{N}}(2N + 135 - B_{\bar{N}}(2N + 133)) + B_{\bar{N}}(2N + 135 - B_{\bar{N}}(2N + 132)) \\
&= B_{\bar{N}}(2N + 135 - (2N + 116)) + B_{\bar{N}}(2N + 135 - (4N + 108)) + B_{\bar{N}}(2N + 135 - (N + 109)) \\
&= B_{\bar{N}}(19) + B_{\bar{N}}(-2N + 27) + B_{\bar{N}}(N + 26) = 19 + 0 + 9 = \mathbf{28} \\
&(N \geq 19)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 136) &= B_{\bar{N}}(2N + 136 - B_{\bar{N}}(2N + 135)) + B_{\bar{N}}(2N + 136 - B_{\bar{N}}(2N + 134)) + B_{\bar{N}}(2N + 136 - B_{\bar{N}}(2N + 133)) \\
&= B_{\bar{N}}(2N + 136 - 28) + B_{\bar{N}}(2N + 136 - (2N + 116)) + B_{\bar{N}}(2N + 136 - (4N + 108)) \\
&= B_{\bar{N}}(2N + 108) + B_{\bar{N}}(20) + B_{\bar{N}}(-2N + 28) = (N - 2) + 20 + 0 = \mathbf{N} + \mathbf{18} \\
&(N \geq 20)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 137) &= B_{\bar{N}}(2N + 137 - B_{\bar{N}}(2N + 136)) + B_{\bar{N}}(2N + 137 - B_{\bar{N}}(2N + 135)) + B_{\bar{N}}(2N + 137 - B_{\bar{N}}(2N + 134)) \\
&= B_{\bar{N}}(2N + 137 - (N + 18)) + B_{\bar{N}}(2N + 137 - 28) + B_{\bar{N}}(2N + 137 - (2N + 116)) \\
&= B_{\bar{N}}(N + 119) + B_{\bar{N}}(2N + 109) + B_{\bar{N}}(21) = 121 + (N + 112) + 21 = \mathbf{N} + \mathbf{254} \\
&(N \geq 21)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 138) &= B_{\bar{N}}(2N + 138 - B_{\bar{N}}(2N + 137)) + B_{\bar{N}}(2N + 138 - B_{\bar{N}}(2N + 136)) + B_{\bar{N}}(2N + 138 - B_{\bar{N}}(2N + 135)) \\
&= B_{\bar{N}}(2N + 138 - (N + 254)) + B_{\bar{N}}(2N + 138 - (N + 18)) + B_{\bar{N}}(2N + 138 - 28) \\
&= B_{\bar{N}}(N - 116) + B_{\bar{N}}(N + 120) + B_{\bar{N}}(2N + 110) = (N - 116) + (N + 121) + (2N + 226) = \mathbf{4N} + \mathbf{231} \\
&(N \geq 117)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 139) &= B_{\bar{N}}(2N + 139 - B_{\bar{N}}(2N + 138)) + B_{\bar{N}}(2N + 139 - B_{\bar{N}}(2N + 137)) + B_{\bar{N}}(2N + 139 - B_{\bar{N}}(2N + 136)) \\
&= B_{\bar{N}}(2N + 139 - (4N + 231)) + B_{\bar{N}}(2N + 139 - (N + 254)) + B_{\bar{N}}(2N + 139 - (N + 18)) \\
&= B_{\bar{N}}(-2N - 92) + B_{\bar{N}}(N - 115) + B_{\bar{N}}(N + 121) = 0 + (N - 115) + (N + 123) = \mathbf{2N} + \mathbf{8} \\
&(N \geq 116)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 140) &= B_{\bar{N}}(2N + 140 - B_{\bar{N}}(2N + 139)) + B_{\bar{N}}(2N + 140 - B_{\bar{N}}(2N + 138)) + B_{\bar{N}}(2N + 140 - B_{\bar{N}}(2N + 137)) \\
&= B_{\bar{N}}(2N + 140 - (2N + 8)) + B_{\bar{N}}(2N + 140 - (4N + 231)) + B_{\bar{N}}(2N + 140 - (N + 254)) \\
&= B_{\bar{N}}(132) + B_{\bar{N}}(-2N - 91) + B_{\bar{N}}(N - 114) = 132 + 0 + (N - 114) = \mathbf{N} + \mathbf{18} \\
&(N \geq 132)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 141) &= B_{\bar{N}}(2N + 141 - B_{\bar{N}}(2N + 140)) + B_{\bar{N}}(2N + 141 - B_{\bar{N}}(2N + 139)) + B_{\bar{N}}(2N + 141 - B_{\bar{N}}(2N + 138)) \\
&= B_{\bar{N}}(2N + 141 - (N + 18)) + B_{\bar{N}}(2N + 141 - (2N + 8)) + B_{\bar{N}}(2N + 141 - (4N + 231)) \\
&= B_{\bar{N}}(N + 123) + B_{\bar{N}}(133) + B_{\bar{N}}(-2N - 90) = (2N + 79) + 133 + 0 = \mathbf{2N} + \mathbf{212} \\
&(N \geq 133)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 142) &= B_{\bar{N}}(2N + 142 - B_{\bar{N}}(2N + 141)) + B_{\bar{N}}(2N + 142 - B_{\bar{N}}(2N + 140)) + B_{\bar{N}}(2N + 142 - B_{\bar{N}}(2N + 139)) \\
&= B_{\bar{N}}(2N + 142 - (2N + 212)) + B_{\bar{N}}(2N + 142 - (N + 18)) + B_{\bar{N}}(2N + 142 - (2N + 8)) \\
&= B_{\bar{N}}(-70) + B_{\bar{N}}(N + 124) + B_{\bar{N}}(134) = 0 + (2N + 10) + 134 = \mathbf{2N} + \mathbf{144} \\
&(N \geq 134)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 143) &= B_{\bar{N}}(2N + 143 - B_{\bar{N}}(2N + 142)) + B_{\bar{N}}(2N + 143 - B_{\bar{N}}(2N + 141)) + B_{\bar{N}}(2N + 143 - B_{\bar{N}}(2N + 140)) \\
&= B_{\bar{N}}(2N + 143 - (2N + 144)) + B_{\bar{N}}(2N + 143 - (2N + 212)) + B_{\bar{N}}(2N + 143 - (N + 18)) \\
&= B_{\bar{N}}(-1) + B_{\bar{N}}(-69) + B_{\bar{N}}(N + 125) = 0 + 0 + (N - 2) = \mathbf{N} - \mathbf{2} \\
&(N \geq 1)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 144) &= B_{\bar{N}}(2N + 144 - B_{\bar{N}}(2N + 143)) + B_{\bar{N}}(2N + 144 - B_{\bar{N}}(2N + 142)) + B_{\bar{N}}(2N + 144 - B_{\bar{N}}(2N + 141)) \\
&= B_{\bar{N}}(2N + 144 - (N - 2)) + B_{\bar{N}}(2N + 144 - (2N + 144)) + B_{\bar{N}}(2N + 144 - (2N + 212)) \\
&= B_{\bar{N}}(N + 146) + B_{\bar{N}}(0) + B_{\bar{N}}(-68) = (N - 2) + 0 + 0 = \mathbf{N} - \mathbf{2} \\
&(N \geq 1)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 145) &= B_{\bar{N}}(2N + 145 - B_{\bar{N}}(2N + 144)) + B_{\bar{N}}(2N + 145 - B_{\bar{N}}(2N + 143)) + B_{\bar{N}}(2N + 145 - B_{\bar{N}}(2N + 142)) \\
&= B_{\bar{N}}(2N + 145 - (N - 2)) + B_{\bar{N}}(2N + 145 - (N - 2)) + B_{\bar{N}}(2N + 145 - (2N + 144)) \\
&= B_{\bar{N}}(N + 147) + B_{\bar{N}}(N + 147) + B_{\bar{N}}(1) = 149 + 149 + 1 = \mathbf{299} \\
&(N \geq 1)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 146) &= B_{\bar{N}}(2N + 146 - B_{\bar{N}}(2N + 145)) + B_{\bar{N}}(2N + 146 - B_{\bar{N}}(2N + 144)) + B_{\bar{N}}(2N + 146 - B_{\bar{N}}(2N + 143)) \\
&= B_{\bar{N}}(2N + 146 - 299) + B_{\bar{N}}(2N + 146 - (N - 2)) + B_{\bar{N}}(2N + 146 - (N - 2)) \\
&= B_{\bar{N}}(2N - 153) + B_{\bar{N}}(N + 148) + B_{\bar{N}}(N + 148) = (2N - 151) + (N + 149) + (N + 149) = \mathbf{4N} + \mathbf{147} \\
&(\mathbf{N} \geq \mathbf{220})
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 147) &= B_{\bar{N}}(2N + 147 - B_{\bar{N}}(2N + 146)) + B_{\bar{N}}(2N + 147 - B_{\bar{N}}(2N + 145)) + B_{\bar{N}}(2N + 147 - B_{\bar{N}}(2N + 144)) \\
&= B_{\bar{N}}(2N + 147 - (4N + 147)) + B_{\bar{N}}(2N + 147 - 299) + B_{\bar{N}}(2N + 147 - (N - 2)) \\
&= B_{\bar{N}}(-2N) + B_{\bar{N}}(2N - 152) + B_{\bar{N}}(N + 149) = 0 + 7 + (N + 151) = \mathbf{N} + \mathbf{158} \\
&(N \geq 219)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 148) &= B_{\bar{N}}(2N + 148 - B_{\bar{N}}(2N + 147)) + B_{\bar{N}}(2N + 148 - B_{\bar{N}}(2N + 146)) + B_{\bar{N}}(2N + 148 - B_{\bar{N}}(2N + 145)) \\
&= B_{\bar{N}}(2N + 148 - (N + 158)) + B_{\bar{N}}(2N + 148 - (4N + 147)) + B_{\bar{N}}(2N + 148 - 299) \\
&= B_{\bar{N}}(N - 10) + B_{\bar{N}}(-2N + 1) + B_{\bar{N}}(2N - 151) = (N - 10) + 0 + \left(\frac{16N}{7} + \frac{5}{7}\right) = \frac{\mathbf{23N}}{\mathbf{7}} - \frac{\mathbf{65}}{\mathbf{7}} \\
&(N \geq 218)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 149) &= B_{\bar{N}}(2N + 149 - B_{\bar{N}}(2N + 148)) + B_{\bar{N}}(2N + 149 - B_{\bar{N}}(2N + 147)) + B_{\bar{N}}(2N + 149 - B_{\bar{N}}(2N + 146)) \\
&= B_{\bar{N}}\left(2N + 149 - \left(\frac{23N}{7} - \frac{65}{7}\right)\right) + B_{\bar{N}}(2N + 149 - (N + 158)) + B_{\bar{N}}(2N + 149 - (4N + 147)) \\
&= B_{\bar{N}}\left(-\frac{9N}{7} + \frac{1108}{7}\right) + B_{\bar{N}}(N - 9) + B_{\bar{N}}(-2N + 2) = 0 + (N - 9) + 0 = \mathbf{N} - \mathbf{9} \\
&(N \geq 124)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 150) &= B_{\bar{N}}(2N + 150 - B_{\bar{N}}(2N + 149)) + B_{\bar{N}}(2N + 150 - B_{\bar{N}}(2N + 148)) + B_{\bar{N}}(2N + 150 - B_{\bar{N}}(2N + 147)) \\
&= B_{\bar{N}}(2N + 150 - (N - 9)) + B_{\bar{N}}\left(2N + 150 - \left(\frac{23N}{7} - \frac{65}{7}\right)\right) + B_{\bar{N}}(2N + 150 - (N + 158)) \\
&= B_{\bar{N}}(N + 159) + B_{\bar{N}}\left(-\frac{9N}{7} + \frac{1115}{7}\right) + B_{\bar{N}}(N - 8) = (2N + 15) + 0 + (N - 8) = \mathbf{3N} + \mathbf{7} \\
&(N \geq 124)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 151) &= B_{\bar{N}}(2N + 151 - B_{\bar{N}}(2N + 150)) + B_{\bar{N}}(2N + 151 - B_{\bar{N}}(2N + 149)) + B_{\bar{N}}(2N + 151 - B_{\bar{N}}(2N + 148)) \\
&= B_{\bar{N}}(2N + 151 - (3N + 7)) + B_{\bar{N}}(2N + 151 - (N - 9)) + B_{\bar{N}}\left(2N + 151 - \left(\frac{23N}{7} - \frac{65}{7}\right)\right) \\
&= B_{\bar{N}}(-N + 144) + B_{\bar{N}}(N + 160) + B_{\bar{N}}\left(-\frac{9N}{7} + \frac{1122}{7}\right) = 0 + (N - 2) + 0 = \mathbf{N} - \mathbf{2} \\
&(N \geq 144)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 152) &= B_{\bar{N}}(2N + 152 - B_{\bar{N}}(2N + 151)) + B_{\bar{N}}(2N + 152 - B_{\bar{N}}(2N + 150)) + B_{\bar{N}}(2N + 152 - B_{\bar{N}}(2N + 149)) \\
&= B_{\bar{N}}(2N + 152 - (N - 2)) + B_{\bar{N}}(2N + 152 - (3N + 7)) + B_{\bar{N}}(2N + 152 - (N - 9)) \\
&= B_{\bar{N}}(N + 154) + B_{\bar{N}}(-N + 145) + B_{\bar{N}}(N + 161) = 156 + 0 + 163 = \mathbf{319} \\
&(N \geq 145)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 153) &= B_{\bar{N}}(2N + 153 - B_{\bar{N}}(2N + 152)) + B_{\bar{N}}(2N + 153 - B_{\bar{N}}(2N + 151)) + B_{\bar{N}}(2N + 153 - B_{\bar{N}}(2N + 150)) \\
&= B_{\bar{N}}(2N + 153 - 319) + B_{\bar{N}}(2N + 153 - (N - 2)) + B_{\bar{N}}(2N + 153 - (3N + 7)) \\
&= B_{\bar{N}}(2N - 166) + B_{\bar{N}}(N + 155) + B_{\bar{N}}(-N + 146) = 7 + (N + 156) + 0 = \mathbf{N} + \mathbf{163} \\
&(\mathbf{N} \geq \mathbf{233})
\end{aligned}$$



$$\begin{aligned}
\mathbf{B}_{\bar{N}}(\mathbf{2N} + \mathbf{154}) &= B_{\bar{N}}(2N + 154 - B_{\bar{N}}(2N + 153)) + B_{\bar{N}}(2N + 154 - B_{\bar{N}}(2N + 152)) + B_{\bar{N}}(2N + 154 - B_{\bar{N}}(2N + 151)) \\
&= B_{\bar{N}}(2N + 154 - (N + 163)) + B_{\bar{N}}(2N + 154 - 319) + B_{\bar{N}}(2N + 154 - (N - 2)) \\
&= B_{\bar{N}}(N - 9) + B_{\bar{N}}(2N - 165) + B_{\bar{N}}(N + 156) = (N - 9) + \left(\frac{16N}{7} - \frac{23}{7}\right) + (N + 158) = \frac{\mathbf{30N}}{\mathbf{7}} + \frac{\mathbf{1020}}{\mathbf{7}} \\
&(N \geq 232)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(\mathbf{2N} + \mathbf{155}) &= B_{\bar{N}}(2N + 155 - B_{\bar{N}}(2N + 154)) + B_{\bar{N}}(2N + 155 - B_{\bar{N}}(2N + 153)) + B_{\bar{N}}(2N + 155 - B_{\bar{N}}(2N + 152)) \\
&= B_{\bar{N}}\left(2N + 155 - \left(\frac{30N}{7} + \frac{1020}{7}\right)\right) + B_{\bar{N}}(2N + 155 - (N + 163)) + B_{\bar{N}}(2N + 155 - 319) \\
&= B_{\bar{N}}\left(-\frac{16N}{7} + \frac{65}{7}\right) + B_{\bar{N}}(N - 8) + B_{\bar{N}}(2N - 164) = 0 + (N - 8) + \left(\frac{15N}{7} - \frac{218}{7}\right) = \frac{\mathbf{22N}}{\mathbf{7}} - \frac{\mathbf{274}}{\mathbf{7}} \\
&(N \geq 231)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(\mathbf{2N} + \mathbf{156}) &= B_{\bar{N}}(2N + 156 - B_{\bar{N}}(2N + 155)) + B_{\bar{N}}(2N + 156 - B_{\bar{N}}(2N + 154)) + B_{\bar{N}}(2N + 156 - B_{\bar{N}}(2N + 153)) \\
&= B_{\bar{N}}\left(2N + 156 - \left(\frac{22N}{7} - \frac{274}{7}\right)\right) + B_{\bar{N}}\left(2N + 156 - \left(\frac{30N}{7} + \frac{1020}{7}\right)\right) + B_{\bar{N}}(2N + 156 - (N + 163)) \\
&= B_{\bar{N}}\left(-\frac{8N}{7} + \frac{1366}{7}\right) + B_{\bar{N}}\left(-\frac{16N}{7} + \frac{72}{7}\right) + B_{\bar{N}}(N - 7) = 0 + 0 + (N - 7) = \mathbf{N} - \mathbf{7} \\
&(N \geq 171)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(\mathbf{2N} + \mathbf{157}) &= B_{\bar{N}}(2N + 157 - B_{\bar{N}}(2N + 156)) + B_{\bar{N}}(2N + 157 - B_{\bar{N}}(2N + 155)) + B_{\bar{N}}(2N + 157 - B_{\bar{N}}(2N + 154)) \\
&= B_{\bar{N}}(2N + 157 - (N - 7)) + B_{\bar{N}}\left(2N + 157 - \left(\frac{22N}{7} - \frac{274}{7}\right)\right) + B_{\bar{N}}\left(2N + 157 - \left(\frac{30N}{7} + \frac{1020}{7}\right)\right) \\
&= B_{\bar{N}}(N + 164) + B_{\bar{N}}\left(-\frac{8N}{7} + \frac{1373}{7}\right) + B_{\bar{N}}\left(-\frac{16N}{7} + \frac{79}{7}\right) = 7 + 0 + 0 = \mathbf{7} \\
&(N \geq 172)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 158) &= B_{\bar{N}}(2N + 158 - B_{\bar{N}}(2N + 157)) + B_{\bar{N}}(2N + 158 - B_{\bar{N}}(2N + 156)) + B_{\bar{N}}(2N + 158 - B_{\bar{N}}(2N + 155)) \\
&= B_{\bar{N}}(2N + 158 - 7) + B_{\bar{N}}(2N + 158 - (N - 7)) + B_{\bar{N}}\left(2N + 158 - \left(\frac{22N}{7} - \frac{274}{7}\right)\right) \\
&= B_{\bar{N}}(2N + 151) + B_{\bar{N}}(N + 165) + B_{\bar{N}}\left(-\frac{8N}{7} + \frac{1380}{7}\right) = (N - 2) + (2N + 91) + 0 = \mathbf{3N} + \mathbf{89} \\
&(N \geq 173)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 159) &= B_{\bar{N}}(2N + 159 - B_{\bar{N}}(2N + 158)) + B_{\bar{N}}(2N + 159 - B_{\bar{N}}(2N + 157)) + B_{\bar{N}}(2N + 159 - B_{\bar{N}}(2N + 156)) \\
&= B_{\bar{N}}(2N + 159 - (3N + 89)) + B_{\bar{N}}(2N + 159 - 7) + B_{\bar{N}}(2N + 159 - (N - 7)) \\
&= B_{\bar{N}}(-N + 70) + B_{\bar{N}}(2N + 152) + B_{\bar{N}}(N + 166) = 0 + 319 + (2N + 16) = \mathbf{2N} + \mathbf{335} \\
&(N \geq 70)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 160) &= B_{\bar{N}}(2N + 160 - B_{\bar{N}}(2N + 159)) + B_{\bar{N}}(2N + 160 - B_{\bar{N}}(2N + 158)) + B_{\bar{N}}(2N + 160 - B_{\bar{N}}(2N + 157)) \\
&= B_{\bar{N}}(2N + 160 - (2N + 335)) + B_{\bar{N}}(2N + 160 - (3N + 89)) + B_{\bar{N}}(2N + 160 - 7) \\
&= B_{\bar{N}}(-175) + B_{\bar{N}}(-N + 71) + B_{\bar{N}}(2N + 153) = 0 + 0 + (N + 163) = \mathbf{N} + \mathbf{163} \\
&(N \geq 71)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 161) &= B_{\bar{N}}(2N + 161 - B_{\bar{N}}(2N + 160)) + B_{\bar{N}}(2N + 161 - B_{\bar{N}}(2N + 159)) + B_{\bar{N}}(2N + 161 - B_{\bar{N}}(2N + 158)) \\
&= B_{\bar{N}}(2N + 161 - (N + 163)) + B_{\bar{N}}(2N + 161 - (2N + 335)) + B_{\bar{N}}(2N + 161 - (3N + 89)) \\
&= B_{\bar{N}}(N - 2) + B_{\bar{N}}(-174) + B_{\bar{N}}(-N + 72) = (N - 2) + 0 + 0 = \mathbf{N} - \mathbf{2} \\
&(N \geq 72)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 162) &= B_{\bar{N}}(2N + 162 - B_{\bar{N}}(2N + 161)) + B_{\bar{N}}(2N + 162 - B_{\bar{N}}(2N + 160)) + B_{\bar{N}}(2N + 162 - B_{\bar{N}}(2N + 159)) \\
&= B_{\bar{N}}(2N + 162 - (N - 2)) + B_{\bar{N}}(2N + 162 - (N + 163)) + B_{\bar{N}}(2N + 162 - (2N + 335)) \\
&= B_{\bar{N}}(N + 164) + B_{\bar{N}}(N - 1) + B_{\bar{N}}(-173) = 7 + (N - 1) + 0 = \mathbf{N} + \mathbf{6} \\
&(N \geq 2)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 163) &= B_{\bar{N}}(2N + 163 - B_{\bar{N}}(2N + 162)) + B_{\bar{N}}(2N + 163 - B_{\bar{N}}(2N + 161)) + B_{\bar{N}}(2N + 163 - B_{\bar{N}}(2N + 160)) \\
&= B_{\bar{N}}(2N + 163 - (N + 6)) + B_{\bar{N}}(2N + 163 - (N - 2)) + B_{\bar{N}}(2N + 163 - (N + 163)) \\
&= B_{\bar{N}}(N + 157) + B_{\bar{N}}(N + 165) + B_{\bar{N}}(N) = 7 + (2N + 91) + N = \mathbf{3N} + \mathbf{98} \\
&(N \geq 1)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 164) &= B_{\bar{N}}(2N + 164 - B_{\bar{N}}(2N + 163)) + B_{\bar{N}}(2N + 164 - B_{\bar{N}}(2N + 162)) + B_{\bar{N}}(2N + 164 - B_{\bar{N}}(2N + 161)) \\
&= B_{\bar{N}}(2N + 164 - (3N + 98)) + B_{\bar{N}}(2N + 164 - (N + 6)) + B_{\bar{N}}(2N + 164 - (N - 2)) \\
&= B_{\bar{N}}(-N + 66) + B_{\bar{N}}(N + 158) + B_{\bar{N}}(N + 166) = 0 + (2N + 89) + (2N + 16) = \mathbf{4N} + \mathbf{105} \\
&(N \geq 66)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 165) &= B_{\bar{N}}(2N + 165 - B_{\bar{N}}(2N + 164)) + B_{\bar{N}}(2N + 165 - B_{\bar{N}}(2N + 163)) + B_{\bar{N}}(2N + 165 - B_{\bar{N}}(2N + 162)) \\
&= B_{\bar{N}}(2N + 165 - (4N + 105)) + B_{\bar{N}}(2N + 165 - (3N + 98)) + B_{\bar{N}}(2N + 165 - (N + 6)) \\
&= B_{\bar{N}}(-2N + 60) + B_{\bar{N}}(-N + 67) + B_{\bar{N}}(N + 159) = 0 + 0 + (2N + 15) = \mathbf{2N} + \mathbf{15} \\
&(N \geq 67)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 166) &= B_{\bar{N}}(2N + 166 - B_{\bar{N}}(2N + 165)) + B_{\bar{N}}(2N + 166 - B_{\bar{N}}(2N + 164)) + B_{\bar{N}}(2N + 166 - B_{\bar{N}}(2N + 163)) \\
&= B_{\bar{N}}(2N + 166 - (2N + 15)) + B_{\bar{N}}(2N + 166 - (4N + 105)) + B_{\bar{N}}(2N + 166 - (3N + 98)) \\
&= B_{\bar{N}}(151) + B_{\bar{N}}(-2N + 61) + B_{\bar{N}}(-N + 68) = 151 + 0 + 0 = \mathbf{151} \\
&(N \geq 151)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 167) &= B_{\bar{N}}(2N + 167 - B_{\bar{N}}(2N + 166)) + B_{\bar{N}}(2N + 167 - B_{\bar{N}}(2N + 165)) + B_{\bar{N}}(2N + 167 - B_{\bar{N}}(2N + 164)) \\
&= B_{\bar{N}}(2N + 167 - 151) + B_{\bar{N}}(2N + 167 - (2N + 15)) + B_{\bar{N}}(2N + 167 - (4N + 105)) \\
&= B_{\bar{N}}(2N + 16) + B_{\bar{N}}(152) + B_{\bar{N}}(-2N + 62) = (2N + 8) + 152 + 0 = \mathbf{2N} + \mathbf{160} \\
&(N \geq 152)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 168) &= B_{\bar{N}}(2N + 168 - B_{\bar{N}}(2N + 167)) + B_{\bar{N}}(2N + 168 - B_{\bar{N}}(2N + 166)) + B_{\bar{N}}(2N + 168 - B_{\bar{N}}(2N + 165)) \\
&= B_{\bar{N}}(2N + 168 - (2N + 160)) + B_{\bar{N}}(2N + 168 - 151) + B_{\bar{N}}(2N + 168 - (2N + 15)) \\
&= B_{\bar{N}}(8) + B_{\bar{N}}(2N + 17) + B_{\bar{N}}(153) = 8 + (N + 20) + 153 = \mathbf{N} + \mathbf{181} \\
&(N \geq 153)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 169) &= B_{\bar{N}}(2N + 169 - B_{\bar{N}}(2N + 168)) + B_{\bar{N}}(2N + 169 - B_{\bar{N}}(2N + 167)) + B_{\bar{N}}(2N + 169 - B_{\bar{N}}(2N + 166)) \\
&= B_{\bar{N}}(2N + 169 - (N + 181)) + B_{\bar{N}}(2N + 169 - (2N + 160)) + B_{\bar{N}}(2N + 169 - 151) \\
&= B_{\bar{N}}(N - 12) + B_{\bar{N}}(9) + B_{\bar{N}}(2N + 18) = (N - 12) + 9 + (N + 22) = \mathbf{2N} + \mathbf{19} \\
&(N \geq 13)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 170) &= B_{\bar{N}}(2N + 170 - B_{\bar{N}}(2N + 169)) + B_{\bar{N}}(2N + 170 - B_{\bar{N}}(2N + 168)) + B_{\bar{N}}(2N + 170 - B_{\bar{N}}(2N + 167)) \\
&= B_{\bar{N}}(2N + 170 - (2N + 19)) + B_{\bar{N}}(2N + 170 - (N + 181)) + B_{\bar{N}}(2N + 170 - (2N + 160)) \\
&= B_{\bar{N}}(151) + B_{\bar{N}}(N - 11) + B_{\bar{N}}(10) = 151 + (N - 11) + 10 = \mathbf{N} + \mathbf{150} \\
&(N \geq 151)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 171) &= B_{\bar{N}}(2N + 171 - B_{\bar{N}}(2N + 170)) + B_{\bar{N}}(2N + 171 - B_{\bar{N}}(2N + 169)) + B_{\bar{N}}(2N + 171 - B_{\bar{N}}(2N + 168)) \\
&= B_{\bar{N}}(2N + 171 - (N + 150)) + B_{\bar{N}}(2N + 171 - (2N + 19)) + B_{\bar{N}}(2N + 171 - (N + 181)) \\
&= B_{\bar{N}}(N + 21) + B_{\bar{N}}(152) + B_{\bar{N}}(N - 10) = (N + 16) + 152 + (N - 10) = \mathbf{2N} + \mathbf{158} \\
&(N \geq 152)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 172) &= B_{\bar{N}}(2N + 172 - B_{\bar{N}}(2N + 171)) + B_{\bar{N}}(2N + 172 - B_{\bar{N}}(2N + 170)) + B_{\bar{N}}(2N + 172 - B_{\bar{N}}(2N + 169)) \\
&= B_{\bar{N}}(2N + 172 - (2N + 158)) + B_{\bar{N}}(2N + 172 - (N + 150)) + B_{\bar{N}}(2N + 172 - (2N + 19)) \\
&= B_{\bar{N}}(14) + B_{\bar{N}}(N + 22) + B_{\bar{N}}(153) = 14 + 22 + 153 = \mathbf{189} \\
&(N \geq 153)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 173) &= B_{\bar{N}}(2N + 173 - B_{\bar{N}}(2N + 172)) + B_{\bar{N}}(2N + 173 - B_{\bar{N}}(2N + 171)) + B_{\bar{N}}(2N + 173 - B_{\bar{N}}(2N + 170)) \\
&= B_{\bar{N}}(2N + 173 - 189) + B_{\bar{N}}(2N + 173 - (2N + 158)) + B_{\bar{N}}(2N + 173 - (N + 150)) \\
&= B_{\bar{N}}(2N - 16) + B_{\bar{N}}(15) + B_{\bar{N}}(N + 23) = (N - 2) + 15 + 21 = \mathbf{N} + \mathbf{34} \\
&(N \geq 83)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 174) &= B_{\bar{N}}(2N + 174 - B_{\bar{N}}(2N + 173)) + B_{\bar{N}}(2N + 174 - B_{\bar{N}}(2N + 172)) + B_{\bar{N}}(2N + 174 - B_{\bar{N}}(2N + 171)) \\
&= B_{\bar{N}}(2N + 174 - (N + 34)) + B_{\bar{N}}(2N + 174 - 189) + B_{\bar{N}}(2N + 174 - (2N + 158)) \\
&= B_{\bar{N}}(N + 140) + B_{\bar{N}}(2N - 15) + B_{\bar{N}}(16) = 142 + (N - 13) + 16 = \mathbf{N} + \mathbf{145} \\
&(N \geq 82)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 175) &= B_{\bar{N}}(2N + 175 - B_{\bar{N}}(2N + 174)) + B_{\bar{N}}(2N + 175 - B_{\bar{N}}(2N + 173)) + B_{\bar{N}}(2N + 175 - B_{\bar{N}}(2N + 172)) \\
&= B_{\bar{N}}(2N + 175 - (N + 145)) + B_{\bar{N}}(2N + 175 - (N + 34)) + B_{\bar{N}}(2N + 175 - 189) \\
&= B_{\bar{N}}(N + 30) + B_{\bar{N}}(N + 141) + B_{\bar{N}}(2N - 14) = (N + 9) + (N + 142) + (2N - 13) = \mathbf{4N} + \mathbf{138} \\
&(N \geq 81)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 176) &= B_{\bar{N}}(2N + 176 - B_{\bar{N}}(2N + 175)) + B_{\bar{N}}(2N + 176 - B_{\bar{N}}(2N + 174)) + B_{\bar{N}}(2N + 176 - B_{\bar{N}}(2N + 173)) \\
&= B_{\bar{N}}(2N + 176 - (4N + 138)) + B_{\bar{N}}(2N + 176 - (N + 145)) + B_{\bar{N}}(2N + 176 - (N + 34)) \\
&= B_{\bar{N}}(-2N + 38) + B_{\bar{N}}(N + 31) + B_{\bar{N}}(N + 142) = 0 + 22 + (N + 144) = \mathbf{N} + \mathbf{166} \\
&(N \geq 19)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 177) &= B_{\bar{N}}(2N + 177 - B_{\bar{N}}(2N + 176)) + B_{\bar{N}}(2N + 177 - B_{\bar{N}}(2N + 175)) + B_{\bar{N}}(2N + 177 - B_{\bar{N}}(2N + 174)) \\
&= B_{\bar{N}}(2N + 177 - (N + 166)) + B_{\bar{N}}(2N + 177 - (4N + 138)) + B_{\bar{N}}(2N + 177 - (N + 145)) \\
&= B_{\bar{N}}(N + 11) + B_{\bar{N}}(-2N + 39) + B_{\bar{N}}(N + 32) = (N + 8) + 0 + (N + 30) = \mathbf{2N} + \mathbf{38} \\
&(N \geq 20)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 178) &= B_{\bar{N}}(2N + 178 - B_{\bar{N}}(2N + 177)) + B_{\bar{N}}(2N + 178 - B_{\bar{N}}(2N + 176)) + B_{\bar{N}}(2N + 178 - B_{\bar{N}}(2N + 175)) \\
&= B_{\bar{N}}(2N + 178 - (2N + 38)) + B_{\bar{N}}(2N + 178 - (N + 166)) + B_{\bar{N}}(2N + 178 - (4N + 138)) \\
&= B_{\bar{N}}(140) + B_{\bar{N}}(N + 12) + B_{\bar{N}}(-2N + 40) = 140 + (N + 9) + 0 = \mathbf{N} + \mathbf{149} \\
&(N \geq 140)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 179) &= B_{\bar{N}}(2N + 179 - B_{\bar{N}}(2N + 178)) + B_{\bar{N}}(2N + 179 - B_{\bar{N}}(2N + 177)) + B_{\bar{N}}(2N + 179 - B_{\bar{N}}(2N + 176)) \\
&= B_{\bar{N}}(2N + 179 - (N + 149)) + B_{\bar{N}}(2N + 179 - (2N + 38)) + B_{\bar{N}}(2N + 179 - (N + 166)) \\
&= B_{\bar{N}}(N + 30) + B_{\bar{N}}(141) + B_{\bar{N}}(N + 13) = (N + 9) + 141 + 15 = \mathbf{N} + \mathbf{165} \\
&(N \geq 141)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 180) &= B_{\bar{N}}(2N + 180 - B_{\bar{N}}(2N + 179)) + B_{\bar{N}}(2N + 180 - B_{\bar{N}}(2N + 178)) + B_{\bar{N}}(2N + 180 - B_{\bar{N}}(2N + 177)) \\
&= B_{\bar{N}}(2N + 180 - (N + 165)) + B_{\bar{N}}(2N + 180 - (N + 149)) + B_{\bar{N}}(2N + 180 - (2N + 38)) \\
&= B_{\bar{N}}(N + 15) + B_{\bar{N}}(N + 31) + B_{\bar{N}}(142) = (N + 11) + 22 + 142 = \mathbf{N} + \mathbf{175} \\
&(N \geq 142)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 181) &= B_{\bar{N}}(2N + 181 - B_{\bar{N}}(2N + 180)) + B_{\bar{N}}(2N + 181 - B_{\bar{N}}(2N + 179)) + B_{\bar{N}}(2N + 181 - B_{\bar{N}}(2N + 178)) \\
&= B_{\bar{N}}(2N + 181 - (N + 175)) + B_{\bar{N}}(2N + 181 - (N + 165)) + B_{\bar{N}}(2N + 181 - (N + 149)) \\
&= B_{\bar{N}}(N + 6) + B_{\bar{N}}(N + 16) + B_{\bar{N}}(N + 32) = (N + 4) + 17 + (N + 30) = \mathbf{2N} + \mathbf{51} \\
&(N \geq 1)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 182) &= B_{\bar{N}}(2N + 182 - B_{\bar{N}}(2N + 181)) + B_{\bar{N}}(2N + 182 - B_{\bar{N}}(2N + 180)) + B_{\bar{N}}(2N + 182 - B_{\bar{N}}(2N + 179)) \\
&= B_{\bar{N}}(2N + 182 - (2N + 51)) + B_{\bar{N}}(2N + 182 - (N + 175)) + B_{\bar{N}}(2N + 182 - (N + 165)) \\
&= B_{\bar{N}}(131) + B_{\bar{N}}(N + 7) + B_{\bar{N}}(N + 17) = 131 + (N + 5) + (N + 13) = \mathbf{2N} + \mathbf{149} \\
&(N \geq 131)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 183) &= B_{\bar{N}}(2N + 183 - B_{\bar{N}}(2N + 182)) + B_{\bar{N}}(2N + 183 - B_{\bar{N}}(2N + 181)) + B_{\bar{N}}(2N + 183 - B_{\bar{N}}(2N + 180)) \\
&= B_{\bar{N}}(2N + 183 - (2N + 149)) + B_{\bar{N}}(2N + 183 - (2N + 51)) + B_{\bar{N}}(2N + 183 - (N + 175)) \\
&= B_{\bar{N}}(34) + B_{\bar{N}}(132) + B_{\bar{N}}(N + 8) = 34 + 132 + (N + 6) = \mathbf{N} + \mathbf{172} \\
&(N \geq 132)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 184) &= B_{\bar{N}}(2N + 184 - B_{\bar{N}}(2N + 183)) + B_{\bar{N}}(2N + 184 - B_{\bar{N}}(2N + 182)) + B_{\bar{N}}(2N + 184 - B_{\bar{N}}(2N + 181)) \\
&= B_{\bar{N}}(2N + 184 - (N + 172)) + B_{\bar{N}}(2N + 184 - (2N + 149)) + B_{\bar{N}}(2N + 184 - (2N + 51)) \\
&= B_{\bar{N}}(N + 12) + B_{\bar{N}}(35) + B_{\bar{N}}(133) = (N + 9) + 35 + 133 = \mathbf{N} + \mathbf{177} \\
&(N \geq 133)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 185) &= B_{\bar{N}}(2N + 185 - B_{\bar{N}}(2N + 184)) + B_{\bar{N}}(2N + 185 - B_{\bar{N}}(2N + 183)) + B_{\bar{N}}(2N + 185 - B_{\bar{N}}(2N + 182)) \\
&= B_{\bar{N}}(2N + 185 - (N + 177)) + B_{\bar{N}}(2N + 185 - (N + 172)) + B_{\bar{N}}(2N + 185 - (2N + 149)) \\
&= B_{\bar{N}}(N + 8) + B_{\bar{N}}(N + 13) + B_{\bar{N}}(36) = (N + 6) + 15 + 36 = \mathbf{N} + \mathbf{57} \\
&(N \geq 36)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 186) &= B_{\bar{N}}(2N + 186 - B_{\bar{N}}(2N + 185)) + B_{\bar{N}}(2N + 186 - B_{\bar{N}}(2N + 184)) + B_{\bar{N}}(2N + 186 - B_{\bar{N}}(2N + 183)) \\
&= B_{\bar{N}}(2N + 186 - (N + 57)) + B_{\bar{N}}(2N + 186 - (N + 177)) + B_{\bar{N}}(2N + 186 - (N + 172)) \\
&= B_{\bar{N}}(N + 129) + B_{\bar{N}}(N + 9) + B_{\bar{N}}(N + 14) = 7 + 12 + (N + 10) = \mathbf{N} + \mathbf{29} \\
&(N \geq 1)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 187) &= B_{\bar{N}}(2N + 187 - B_{\bar{N}}(2N + 186)) + B_{\bar{N}}(2N + 187 - B_{\bar{N}}(2N + 185)) + B_{\bar{N}}(2N + 187 - B_{\bar{N}}(2N + 184)) \\
&= B_{\bar{N}}(2N + 187 - (N + 29)) + B_{\bar{N}}(2N + 187 - (N + 57)) + B_{\bar{N}}(2N + 187 - (N + 177)) \\
&= B_{\bar{N}}(N + 158) + B_{\bar{N}}(N + 130) + B_{\bar{N}}(N + 10) = (2N + 89) + (2N + 81) + (N + 7) = \mathbf{5N} + \mathbf{177} \\
&(N \geq 1)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 188) &= B_{\bar{N}}(2N + 188 - B_{\bar{N}}(2N + 187)) + B_{\bar{N}}(2N + 188 - B_{\bar{N}}(2N + 186)) + B_{\bar{N}}(2N + 188 - B_{\bar{N}}(2N + 185)) \\
&= B_{\bar{N}}(2N + 188 - (5N + 177)) + B_{\bar{N}}(2N + 188 - (N + 29)) + B_{\bar{N}}(2N + 188 - (N + 57)) \\
&= B_{\bar{N}}(-3N + 11) + B_{\bar{N}}(N + 159) + B_{\bar{N}}(N + 131) = 0 + (2N + 15) + (2N + 11) = \mathbf{4N} + \mathbf{26} \\
&(N \geq 4)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 189) &= B_{\bar{N}}(2N + 189 - B_{\bar{N}}(2N + 188)) + B_{\bar{N}}(2N + 189 - B_{\bar{N}}(2N + 187)) + B_{\bar{N}}(2N + 189 - B_{\bar{N}}(2N + 186)) \\
&= B_{\bar{N}}(2N + 189 - (4N + 26)) + B_{\bar{N}}(2N + 189 - (5N + 177)) + B_{\bar{N}}(2N + 189 - (N + 29)) \\
&= B_{\bar{N}}(-2N + 163) + B_{\bar{N}}(-3N + 12) + B_{\bar{N}}(N + 160) = 0 + 0 + (N - 2) = \mathbf{N} - \mathbf{2} \\
&(N \geq 82)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 190) &= B_{\bar{N}}(2N + 190 - B_{\bar{N}}(2N + 189)) + B_{\bar{N}}(2N + 190 - B_{\bar{N}}(2N + 188)) + B_{\bar{N}}(2N + 190 - B_{\bar{N}}(2N + 187)) \\
&= B_{\bar{N}}(2N + 190 - (N - 2)) + B_{\bar{N}}(2N + 190 - (4N + 26)) + B_{\bar{N}}(2N + 190 - (5N + 177)) \\
&= B_{\bar{N}}(N + 192) + B_{\bar{N}}(-2N + 164) + B_{\bar{N}}(-3N + 13) = 7 + 0 + 0 = \mathbf{7} \\
&(N \geq 82)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 191) &= B_{\bar{N}}(2N + 191 - B_{\bar{N}}(2N + 190)) + B_{\bar{N}}(2N + 191 - B_{\bar{N}}(2N + 189)) + B_{\bar{N}}(2N + 191 - B_{\bar{N}}(2N + 188)) \\
&= B_{\bar{N}}(2N + 191 - 7) + B_{\bar{N}}(2N + 191 - (N - 2)) + B_{\bar{N}}(2N + 191 - (4N + 26)) \\
&= B_{\bar{N}}(2N + 184) + B_{\bar{N}}(N + 193) + B_{\bar{N}}(-2N + 165) = (N + 177) + (2N + 99) + 0 = \mathbf{3N} + \mathbf{276} \\
&(N \geq 83)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 192) &= B_{\bar{N}}(2N + 192 - B_{\bar{N}}(2N + 191)) + B_{\bar{N}}(2N + 192 - B_{\bar{N}}(2N + 190)) + B_{\bar{N}}(2N + 192 - B_{\bar{N}}(2N + 189)) \\
&= B_{\bar{N}}(2N + 192 - (3N + 276)) + B_{\bar{N}}(2N + 192 - 7) + B_{\bar{N}}(2N + 192 - (N - 2)) \\
&= B_{\bar{N}}(-N - 84) + B_{\bar{N}}(2N + 185) + B_{\bar{N}}(N + 194) = 0 + (N + 57) + (2N + 20) = \mathbf{3N} + \mathbf{77} \\
&(N \geq 1)
\end{aligned}$$



$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + \mathbf{193}) &= B_{\bar{N}}(2N + 193 - B_{\bar{N}}(2N + 192)) + B_{\bar{N}}(2N + 193 - B_{\bar{N}}(2N + 191)) + B_{\bar{N}}(2N + 193 - B_{\bar{N}}(2N + 190)) \\
&= B_{\bar{N}}(2N + 193 - (3N + 77)) + B_{\bar{N}}(2N + 193 - (3N + 276)) + B_{\bar{N}}(2N + 193 - 7) \\
&= B_{\bar{N}}(-N + 116) + B_{\bar{N}}(-N - 83) + B_{\bar{N}}(2N + 186) = 0 + 0 + (N + 29) = \mathbf{N} + \mathbf{29} \\
&(N \geq 116)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + \mathbf{194}) &= B_{\bar{N}}(2N + 194 - B_{\bar{N}}(2N + 193)) + B_{\bar{N}}(2N + 194 - B_{\bar{N}}(2N + 192)) + B_{\bar{N}}(2N + 194 - B_{\bar{N}}(2N + 191)) \\
&= B_{\bar{N}}(2N + 194 - (N + 29)) + B_{\bar{N}}(2N + 194 - (3N + 77)) + B_{\bar{N}}(2N + 194 - (3N + 276)) \\
&= B_{\bar{N}}(N + 165) + B_{\bar{N}}(-N + 117) + B_{\bar{N}}(-N - 82) = (2N + 91) + 0 + 0 = \mathbf{2N} + \mathbf{91} \\
&(N \geq 117)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + \mathbf{195}) &= B_{\bar{N}}(2N + 195 - B_{\bar{N}}(2N + 194)) + B_{\bar{N}}(2N + 195 - B_{\bar{N}}(2N + 193)) + B_{\bar{N}}(2N + 195 - B_{\bar{N}}(2N + 192)) \\
&= B_{\bar{N}}(2N + 195 - (2N + 91)) + B_{\bar{N}}(2N + 195 - (N + 29)) + B_{\bar{N}}(2N + 195 - (3N + 77)) \\
&= B_{\bar{N}}(104) + B_{\bar{N}}(N + 166) + B_{\bar{N}}(-N + 118) = 104 + (2N + 16) + 0 = \mathbf{2N} + \mathbf{120} \\
&(N \geq 118)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + \mathbf{196}) &= B_{\bar{N}}(2N + 196 - B_{\bar{N}}(2N + 195)) + B_{\bar{N}}(2N + 196 - B_{\bar{N}}(2N + 194)) + B_{\bar{N}}(2N + 196 - B_{\bar{N}}(2N + 193)) \\
&= B_{\bar{N}}(2N + 196 - (2N + 120)) + B_{\bar{N}}(2N + 196 - (2N + 91)) + B_{\bar{N}}(2N + 196 - (N + 29)) \\
&= B_{\bar{N}}(76) + B_{\bar{N}}(105) + B_{\bar{N}}(N + 167) = 76 + 105 + (N - 2) = \mathbf{N} + \mathbf{179} \\
&(N \geq 105)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + \mathbf{197}) &= B_{\bar{N}}(2N + 197 - B_{\bar{N}}(2N + 196)) + B_{\bar{N}}(2N + 197 - B_{\bar{N}}(2N + 195)) + B_{\bar{N}}(2N + 197 - B_{\bar{N}}(2N + 194)) \\
&= B_{\bar{N}}(2N + 197 - (N + 179)) + B_{\bar{N}}(2N + 197 - (2N + 120)) + B_{\bar{N}}(2N + 197 - (2N + 91)) \\
&= B_{\bar{N}}(N + 18) + B_{\bar{N}}(77) + B_{\bar{N}}(106) = 18 + 77 + 106 = \mathbf{201} \\
&(N \geq 106)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(\mathbf{2N} + \mathbf{198}) &= B_{\bar{N}}(2N + 198 - B_{\bar{N}}(2N + 197)) + B_{\bar{N}}(2N + 198 - B_{\bar{N}}(2N + 196)) + B_{\bar{N}}(2N + 198 - B_{\bar{N}}(2N + 195)) \\
&= B_{\bar{N}}(2N + 198 - 201) + B_{\bar{N}}(2N + 198 - (N + 179)) + B_{\bar{N}}(2N + 198 - (2N + 120)) \\
&= B_{\bar{N}}(2N - 3) + B_{\bar{N}}(N + 19) + B_{\bar{N}}(78) = \left(\frac{15N}{7} - \frac{57}{7}\right) + (N + 13) + 78 = \frac{\mathbf{22N}}{7} + \frac{\mathbf{580}}{7} \\
&(N \geq 78)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(\mathbf{2N} + \mathbf{199}) &= B_{\bar{N}}(2N + 199 - B_{\bar{N}}(2N + 198)) + B_{\bar{N}}(2N + 199 - B_{\bar{N}}(2N + 197)) + B_{\bar{N}}(2N + 199 - B_{\bar{N}}(2N + 196)) \\
&= B_{\bar{N}}\left(2N + 199 - \left(\frac{22N}{7} + \frac{580}{7}\right)\right) + B_{\bar{N}}(2N + 199 - 201) + B_{\bar{N}}(2N + 199 - (N + 179)) \\
&= B_{\bar{N}}\left(-\frac{8N}{7} + \frac{813}{7}\right) + B_{\bar{N}}(2N - 2) + B_{\bar{N}}(N + 20) = 0 + (N - 2) + (N + 15) = \mathbf{2N} + \mathbf{13} \\
&(N \geq 102)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(\mathbf{2N} + \mathbf{200}) &= B_{\bar{N}}(2N + 200 - B_{\bar{N}}(2N + 199)) + B_{\bar{N}}(2N + 200 - B_{\bar{N}}(2N + 198)) + B_{\bar{N}}(2N + 200 - B_{\bar{N}}(2N + 197)) \\
&= B_{\bar{N}}(2N + 200 - (2N + 13)) + B_{\bar{N}}\left(2N + 200 - \left(\frac{22N}{7} + \frac{580}{7}\right)\right) + B_{\bar{N}}(2N + 200 - 201) \\
&= B_{\bar{N}}(187) + B_{\bar{N}}\left(-\frac{8N}{7} + \frac{820}{7}\right) + B_{\bar{N}}(2N - 1) = 187 + 0 + 6 = \mathbf{193} \\
&(N \geq 187)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(\mathbf{2N} + \mathbf{201}) &= B_{\bar{N}}(2N + 201 - B_{\bar{N}}(2N + 200)) + B_{\bar{N}}(2N + 201 - B_{\bar{N}}(2N + 199)) + B_{\bar{N}}(2N + 201 - B_{\bar{N}}(2N + 198)) \\
&= B_{\bar{N}}(2N + 201 - 193) + B_{\bar{N}}(2N + 201 - (2N + 13)) + B_{\bar{N}}\left(2N + 201 - \left(\frac{22N}{7} + \frac{580}{7}\right)\right) \\
&= B_{\bar{N}}(2N + 8) + B_{\bar{N}}(188) + B_{\bar{N}}\left(-\frac{8N}{7} + \frac{827}{7}\right) = (2N + 2) + 188 + 0 = \mathbf{2N} + \mathbf{190} \\
&(N \geq 188)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(\mathbf{2N} + \mathbf{202}) &= B_{\bar{N}}(2N + 202 - B_{\bar{N}}(2N + 201)) + B_{\bar{N}}(2N + 202 - B_{\bar{N}}(2N + 200)) + B_{\bar{N}}(2N + 202 - B_{\bar{N}}(2N + 199)) \\
&= B_{\bar{N}}(2N + 202 - (2N + 190)) + B_{\bar{N}}(2N + 202 - 193) + B_{\bar{N}}(2N + 202 - (2N + 13)) \\
&= B_{\bar{N}}(12) + B_{\bar{N}}(2N + 9) + B_{\bar{N}}(189) = 12 + (N + 14) + 189 = \mathbf{N} + \mathbf{215} \\
&(N \geq 189)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(\mathbf{2N} + \mathbf{203}) &= B_{\bar{N}}(2N + 203 - B_{\bar{N}}(2N + 202)) + B_{\bar{N}}(2N + 203 - B_{\bar{N}}(2N + 201)) + B_{\bar{N}}(2N + 203 - B_{\bar{N}}(2N + 200)) \\
&= B_{\bar{N}}(2N + 203 - (N + 215)) + B_{\bar{N}}(2N + 203 - (2N + 190)) + B_{\bar{N}}(2N + 203 - 193) \\
&= B_{\bar{N}}(N - 12) + B_{\bar{N}}(13) + B_{\bar{N}}(2N + 10) = (N - 12) + 13 + (N + 16) = \mathbf{2N} + \mathbf{17} \\
&(N \geq 13)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(\mathbf{2N} + \mathbf{204}) &= B_{\bar{N}}(2N + 204 - B_{\bar{N}}(2N + 203)) + B_{\bar{N}}(2N + 204 - B_{\bar{N}}(2N + 202)) + B_{\bar{N}}(2N + 204 - B_{\bar{N}}(2N + 201)) \\
&= B_{\bar{N}}(2N + 204 - (2N + 17)) + B_{\bar{N}}(2N + 204 - (N + 215)) + B_{\bar{N}}(2N + 204 - (2N + 190)) \\
&= B_{\bar{N}}(187) + B_{\bar{N}}(N - 11) + B_{\bar{N}}(14) = 187 + (N - 11) + 14 = \mathbf{N} + \mathbf{190} \\
&(N \geq 187)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(\mathbf{2N} + \mathbf{205}) &= B_{\bar{N}}(2N + 205 - B_{\bar{N}}(2N + 204)) + B_{\bar{N}}(2N + 205 - B_{\bar{N}}(2N + 203)) + B_{\bar{N}}(2N + 205 - B_{\bar{N}}(2N + 202)) \\
&= B_{\bar{N}}(2N + 205 - (N + 190)) + B_{\bar{N}}(2N + 205 - (2N + 17)) + B_{\bar{N}}(2N + 205 - (N + 215)) \\
&= B_{\bar{N}}(N + 15) + B_{\bar{N}}(188) + B_{\bar{N}}(N - 10) = (N + 11) + 188 + (N - 10) = \mathbf{2N} + \mathbf{189} \\
&(N \geq 188)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(\mathbf{2N} + \mathbf{206}) &= B_{\bar{N}}(2N + 206 - B_{\bar{N}}(2N + 205)) + B_{\bar{N}}(2N + 206 - B_{\bar{N}}(2N + 204)) + B_{\bar{N}}(2N + 206 - B_{\bar{N}}(2N + 203)) \\
&= B_{\bar{N}}(2N + 206 - (2N + 189)) + B_{\bar{N}}(2N + 206 - (N + 190)) + B_{\bar{N}}(2N + 206 - (2N + 17)) \\
&= B_{\bar{N}}(17) + B_{\bar{N}}(N + 16) + B_{\bar{N}}(189) = 17 + 17 + 189 = \mathbf{223} \\
&(N \geq 189)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(\mathbf{2N} + \mathbf{207}) &= B_{\bar{N}}(2N + 207 - B_{\bar{N}}(2N + 206)) + B_{\bar{N}}(2N + 207 - B_{\bar{N}}(2N + 205)) + B_{\bar{N}}(2N + 207 - B_{\bar{N}}(2N + 204)) \\
&= B_{\bar{N}}(2N + 207 - 223) + B_{\bar{N}}(2N + 207 - (2N + 189)) + B_{\bar{N}}(2N + 207 - (N + 190)) \\
&= B_{\bar{N}}(2N - 16) + B_{\bar{N}}(18) + B_{\bar{N}}(N + 17) = (N - 2) + 18 + (N + 13) = \mathbf{2N} + \mathbf{29} \\
&(N \geq 83)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(\mathbf{2N} + \mathbf{208}) &= B_{\bar{N}}(2N + 208 - B_{\bar{N}}(2N + 207)) + B_{\bar{N}}(2N + 208 - B_{\bar{N}}(2N + 206)) + B_{\bar{N}}(2N + 208 - B_{\bar{N}}(2N + 205)) \\
&= B_{\bar{N}}(2N + 208 - (2N + 29)) + B_{\bar{N}}(2N + 208 - 223) + B_{\bar{N}}(2N + 208 - (2N + 189)) \\
&= B_{\bar{N}}(179) + B_{\bar{N}}(2N - 15) + B_{\bar{N}}(19) = 179 + (N - 13) + 19 = \mathbf{N} + \mathbf{185} \\
&(N \geq 179)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(\mathbf{2N} + \mathbf{209}) &= B_{\bar{N}}(2N + 209 - B_{\bar{N}}(2N + 208)) + B_{\bar{N}}(2N + 209 - B_{\bar{N}}(2N + 207)) + B_{\bar{N}}(2N + 209 - B_{\bar{N}}(2N + 206)) \\
&= B_{\bar{N}}(2N + 209 - (N + 185)) + B_{\bar{N}}(2N + 209 - (2N + 29)) + B_{\bar{N}}(2N + 209 - 223) \\
&= B_{\bar{N}}(N + 24) + B_{\bar{N}}(180) + B_{\bar{N}}(2N - 14) = (2N + 11) + 180 + (2N - 13) = \mathbf{4N} + \mathbf{178} \\
&(N \geq 180)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(\mathbf{2N} + \mathbf{210}) &= B_{\bar{N}}(2N + 210 - B_{\bar{N}}(2N + 209)) + B_{\bar{N}}(2N + 210 - B_{\bar{N}}(2N + 208)) + B_{\bar{N}}(2N + 210 - B_{\bar{N}}(2N + 207)) \\
&= B_{\bar{N}}(2N + 210 - (4N + 178)) + B_{\bar{N}}(2N + 210 - (N + 185)) + B_{\bar{N}}(2N + 210 - (2N + 29)) \\
&= B_{\bar{N}}(-2N + 32) + B_{\bar{N}}(N + 25) + B_{\bar{N}}(181) = 0 + (2N + 5) + 181 = \mathbf{2N} + \mathbf{186} \\
&(N \geq 181)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(\mathbf{2N} + \mathbf{211}) &= B_{\bar{N}}(2N + 211 - B_{\bar{N}}(2N + 210)) + B_{\bar{N}}(2N + 211 - B_{\bar{N}}(2N + 209)) + B_{\bar{N}}(2N + 211 - B_{\bar{N}}(2N + 208)) \\
&= B_{\bar{N}}(2N + 211 - (2N + 186)) + B_{\bar{N}}(2N + 211 - (4N + 178)) + B_{\bar{N}}(2N + 211 - (N + 185)) \\
&= B_{\bar{N}}(25) + B_{\bar{N}}(-2N + 33) + B_{\bar{N}}(N + 26) = 25 + 0 + 9 = \mathbf{34} \\
&(N \geq 25)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(\mathbf{2N} + \mathbf{212}) &= B_{\bar{N}}(2N + 212 - B_{\bar{N}}(2N + 211)) + B_{\bar{N}}(2N + 212 - B_{\bar{N}}(2N + 210)) + B_{\bar{N}}(2N + 212 - B_{\bar{N}}(2N + 209)) \\
&= B_{\bar{N}}(2N + 212 - 34) + B_{\bar{N}}(2N + 212 - (2N + 186)) + B_{\bar{N}}(2N + 212 - (4N + 178)) \\
&= B_{\bar{N}}(2N + 178) + B_{\bar{N}}(26) + B_{\bar{N}}(-2N + 34) = (N + 149) + 26 + 0 = \mathbf{N} + \mathbf{175} \\
&(N \geq 26)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(\mathbf{2N} + \mathbf{213}) &= B_{\bar{N}}(2N + 213 - B_{\bar{N}}(2N + 212)) + B_{\bar{N}}(2N + 213 - B_{\bar{N}}(2N + 211)) + B_{\bar{N}}(2N + 213 - B_{\bar{N}}(2N + 210)) \\
&= B_{\bar{N}}(2N + 213 - (N + 175)) + B_{\bar{N}}(2N + 213 - 34) + B_{\bar{N}}(2N + 213 - (2N + 186)) \\
&= B_{\bar{N}}(N + 38) + B_{\bar{N}}(2N + 179) + B_{\bar{N}}(27) = (2N + 10) + (N + 165) + 27 = \mathbf{3N} + \mathbf{202} \\
&(N \geq 27)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(\mathbf{2N} + \mathbf{214}) &= B_{\bar{N}}(2N + 214 - B_{\bar{N}}(2N + 213)) + B_{\bar{N}}(2N + 214 - B_{\bar{N}}(2N + 212)) + B_{\bar{N}}(2N + 214 - B_{\bar{N}}(2N + 211)) \\
&= B_{\bar{N}}(2N + 214 - (3N + 202)) + B_{\bar{N}}(2N + 214 - (N + 175)) + B_{\bar{N}}(2N + 214 - 34) \\
&= B_{\bar{N}}(-N + 12) + B_{\bar{N}}(N + 39) + B_{\bar{N}}(2N + 180) = 0 + (N + 4) + (N + 175) = \mathbf{2N} + \mathbf{179} \\
&(N \geq 12)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(\mathbf{2N} + \mathbf{215}) &= B_{\bar{N}}(2N + 215 - B_{\bar{N}}(2N + 214)) + B_{\bar{N}}(2N + 215 - B_{\bar{N}}(2N + 213)) + B_{\bar{N}}(2N + 215 - B_{\bar{N}}(2N + 212)) \\
&= B_{\bar{N}}(2N + 215 - (2N + 179)) + B_{\bar{N}}(2N + 215 - (3N + 202)) + B_{\bar{N}}(2N + 215 - (N + 175)) \\
&= B_{\bar{N}}(36) + B_{\bar{N}}(-N + 13) + B_{\bar{N}}(N + 40) = 36 + 0 + 39 = \mathbf{75} \\
&(N \geq 36)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(\mathbf{2N} + \mathbf{216}) &= B_{\bar{N}}(2N + 216 - B_{\bar{N}}(2N + 215)) + B_{\bar{N}}(2N + 216 - B_{\bar{N}}(2N + 214)) + B_{\bar{N}}(2N + 216 - B_{\bar{N}}(2N + 213)) \\
&= B_{\bar{N}}(2N + 216 - 75) + B_{\bar{N}}(2N + 216 - (2N + 179)) + B_{\bar{N}}(2N + 216 - (3N + 202)) \\
&= B_{\bar{N}}(2N + 141) + B_{\bar{N}}(37) + B_{\bar{N}}(-N + 14) = (2N + 212) + 37 + 0 = \mathbf{2N} + \mathbf{249} \\
&(N \geq 37)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(\mathbf{2N} + \mathbf{217}) &= B_{\bar{N}}(2N + 217 - B_{\bar{N}}(2N + 216)) + B_{\bar{N}}(2N + 217 - B_{\bar{N}}(2N + 215)) + B_{\bar{N}}(2N + 217 - B_{\bar{N}}(2N + 214)) \\
&= B_{\bar{N}}(2N + 217 - (2N + 249)) + B_{\bar{N}}(2N + 217 - 75) + B_{\bar{N}}(2N + 217 - (2N + 179)) \\
&= B_{\bar{N}}(-32) + B_{\bar{N}}(2N + 142) + B_{\bar{N}}(38) = 0 + (2N + 144) + 38 = \mathbf{2N} + \mathbf{182} \\
&(N \geq 38)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(\mathbf{2N} + \mathbf{218}) &= B_{\bar{N}}(2N + 218 - B_{\bar{N}}(2N + 217)) + B_{\bar{N}}(2N + 218 - B_{\bar{N}}(2N + 216)) + B_{\bar{N}}(2N + 218 - B_{\bar{N}}(2N + 215)) \\
&= B_{\bar{N}}(2N + 218 - (2N + 182)) + B_{\bar{N}}(2N + 218 - (2N + 249)) + B_{\bar{N}}(2N + 218 - 75) \\
&= B_{\bar{N}}(36) + B_{\bar{N}}(-31) + B_{\bar{N}}(2N + 143) = 36 + 0 + (N - 2) = \mathbf{N} + \mathbf{34} \\
&(N \geq 36)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(\mathbf{2N} + \mathbf{219}) &= B_{\bar{N}}(2N + 219 - B_{\bar{N}}(2N + 218)) + B_{\bar{N}}(2N + 219 - B_{\bar{N}}(2N + 217)) + B_{\bar{N}}(2N + 219 - B_{\bar{N}}(2N + 216)) \\
&= B_{\bar{N}}(2N + 219 - (N + 34)) + B_{\bar{N}}(2N + 219 - (2N + 182)) + B_{\bar{N}}(2N + 219 - (2N + 249)) \\
&= B_{\bar{N}}(N + 185) + B_{\bar{N}}(37) + B_{\bar{N}}(-30) = 7 + 37 + 0 = \mathbf{44} \\
&(N \geq 37)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(\mathbf{2N} + \mathbf{220}) &= B_{\bar{N}}(2N + 220 - B_{\bar{N}}(2N + 219)) + B_{\bar{N}}(2N + 220 - B_{\bar{N}}(2N + 218)) + B_{\bar{N}}(2N + 220 - B_{\bar{N}}(2N + 217)) \\
&= B_{\bar{N}}(2N + 220 - 44) + B_{\bar{N}}(2N + 220 - (N + 34)) + B_{\bar{N}}(2N + 220 - (2N + 182)) \\
&= B_{\bar{N}}(2N + 176) + B_{\bar{N}}(N + 186) + B_{\bar{N}}(38) = (N + 166) + (2N + 97) + 38 = \mathbf{3N} + \mathbf{301} \\
&(N \geq 38)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(\mathbf{2N} + \mathbf{221}) &= B_{\bar{N}}(2N + 221 - B_{\bar{N}}(2N + 220)) + B_{\bar{N}}(2N + 221 - B_{\bar{N}}(2N + 219)) + B_{\bar{N}}(2N + 221 - B_{\bar{N}}(2N + 218)) \\
&= B_{\bar{N}}(2N + 221 - (3N + 301)) + B_{\bar{N}}(2N + 221 - 44) + B_{\bar{N}}(2N + 221 - (N + 34)) \\
&= B_{\bar{N}}(-N - 80) + B_{\bar{N}}(2N + 177) + B_{\bar{N}}(N + 187) = 0 + (2N + 38) + (2N + 19) = \mathbf{4N} + \mathbf{57} \\
&(N \geq 1)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(\mathbf{2N} + \mathbf{222}) &= B_{\bar{N}}(2N + 222 - B_{\bar{N}}(2N + 221)) + B_{\bar{N}}(2N + 222 - B_{\bar{N}}(2N + 220)) + B_{\bar{N}}(2N + 222 - B_{\bar{N}}(2N + 219)) \\
&= B_{\bar{N}}(2N + 222 - (4N + 57)) + B_{\bar{N}}(2N + 222 - (3N + 301)) + B_{\bar{N}}(2N + 222 - 44) \\
&= B_{\bar{N}}(-2N + 165) + B_{\bar{N}}(-N - 79) + B_{\bar{N}}(2N + 178) = 0 + 0 + (N + 149) = \mathbf{N} + \mathbf{149} \\
&(N \geq 83)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(\mathbf{2N} + \mathbf{223}) &= B_{\bar{N}}(2N + 223 - B_{\bar{N}}(2N + 222)) + B_{\bar{N}}(2N + 223 - B_{\bar{N}}(2N + 221)) + B_{\bar{N}}(2N + 223 - B_{\bar{N}}(2N + 220)) \\
&= B_{\bar{N}}(2N + 223 - (N + 149)) + B_{\bar{N}}(2N + 223 - (4N + 57)) + B_{\bar{N}}(2N + 223 - (3N + 301)) \\
&= B_{\bar{N}}(N + 74) + B_{\bar{N}}(-2N + 166) + B_{\bar{N}}(-N - 78) = (2N + 65) + 0 + 0 = \mathbf{2N} + \mathbf{65} \\
&(N \geq 83)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(\mathbf{2N} + \mathbf{224}) &= B_{\bar{N}}(2N + 224 - B_{\bar{N}}(2N + 223)) + B_{\bar{N}}(2N + 224 - B_{\bar{N}}(2N + 222)) + B_{\bar{N}}(2N + 224 - B_{\bar{N}}(2N + 221)) \\
&= B_{\bar{N}}(2N + 224 - (2N + 65)) + B_{\bar{N}}(2N + 224 - (N + 149)) + B_{\bar{N}}(2N + 224 - (4N + 57)) \\
&= B_{\bar{N}}(159) + B_{\bar{N}}(N + 75) + B_{\bar{N}}(-2N + 167) = 159 + (2N + 3) + 0 = \mathbf{2N} + \mathbf{162} \\
&(N \geq 159)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(\mathbf{2N} + \mathbf{225}) &= B_{\bar{N}}(2N + 225 - B_{\bar{N}}(2N + 224)) + B_{\bar{N}}(2N + 225 - B_{\bar{N}}(2N + 223)) + B_{\bar{N}}(2N + 225 - B_{\bar{N}}(2N + 222)) \\
&= B_{\bar{N}}(2N + 225 - (2N + 162)) + B_{\bar{N}}(2N + 225 - (2N + 65)) + B_{\bar{N}}(2N + 225 - (N + 149)) \\
&= B_{\bar{N}}(63) + B_{\bar{N}}(160) + B_{\bar{N}}(N + 76) = 63 + 160 + (N - 2) = \mathbf{N} + \mathbf{221} \\
&(N \geq 160)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(\mathbf{2N} + \mathbf{226}) &= B_{\bar{N}}(2N + 226 - B_{\bar{N}}(2N + 225)) + B_{\bar{N}}(2N + 226 - B_{\bar{N}}(2N + 224)) + B_{\bar{N}}(2N + 226 - B_{\bar{N}}(2N + 223)) \\
&= B_{\bar{N}}(2N + 226 - (N + 221)) + B_{\bar{N}}(2N + 226 - (2N + 162)) + B_{\bar{N}}(2N + 226 - (2N + 65)) \\
&= B_{\bar{N}}(N + 5) + B_{\bar{N}}(64) + B_{\bar{N}}(161) = 9 + 64 + 161 = \mathbf{234} \\
&(N \geq 161)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(\mathbf{2N} + \mathbf{227}) &= B_{\bar{N}}(2N + 227 - B_{\bar{N}}(2N + 226)) + B_{\bar{N}}(2N + 227 - B_{\bar{N}}(2N + 225)) + B_{\bar{N}}(2N + 227 - B_{\bar{N}}(2N + 224)) \\
&= B_{\bar{N}}(2N + 227 - 234) + B_{\bar{N}}(2N + 227 - (N + 221)) + B_{\bar{N}}(2N + 227 - (2N + 162)) \\
&= B_{\bar{N}}(2N - 7) + B_{\bar{N}}(N + 6) + B_{\bar{N}}(65) = (2N - 6) + (N + 4) + 65 = \mathbf{3N} + \mathbf{63} \\
&(N \geq 74)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(\mathbf{2N} + \mathbf{228}) &= B_{\bar{N}}(2N + 228 - B_{\bar{N}}(2N + 227)) + B_{\bar{N}}(2N + 228 - B_{\bar{N}}(2N + 226)) + B_{\bar{N}}(2N + 228 - B_{\bar{N}}(2N + 225)) \\
&= B_{\bar{N}}(2N + 228 - (3N + 63)) + B_{\bar{N}}(2N + 228 - 234) + B_{\bar{N}}(2N + 228 - (N + 221)) \\
&= B_{\bar{N}}(-N + 165) + B_{\bar{N}}(2N - 6) + B_{\bar{N}}(N + 7) = 0 + (2N - 4) + (N + 5) = \mathbf{3N} + \mathbf{1} \\
&(N \geq 165)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(\mathbf{2N} + \mathbf{229}) &= B_{\bar{N}}(2N + 229 - B_{\bar{N}}(2N + 228)) + B_{\bar{N}}(2N + 229 - B_{\bar{N}}(2N + 227)) + B_{\bar{N}}(2N + 229 - B_{\bar{N}}(2N + 226)) \\
&= B_{\bar{N}}(2N + 229 - (3N + 1)) + B_{\bar{N}}(2N + 229 - (3N + 63)) + B_{\bar{N}}(2N + 229 - 234) \\
&= B_{\bar{N}}(-N + 228) + B_{\bar{N}}(-N + 166) + B_{\bar{N}}(2N - 5) = 0 + 0 + 7 = \mathbf{7} \\
&(N \geq 228)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(\mathbf{2N} + \mathbf{230}) &= B_{\bar{N}}(2N + 230 - B_{\bar{N}}(2N + 229)) + B_{\bar{N}}(2N + 230 - B_{\bar{N}}(2N + 228)) + B_{\bar{N}}(2N + 230 - B_{\bar{N}}(2N + 227)) \\
&= B_{\bar{N}}(2N + 230 - 7) + B_{\bar{N}}(2N + 230 - (3N + 1)) + B_{\bar{N}}(2N + 230 - (3N + 63)) \\
&= B_{\bar{N}}(2N + 223) + B_{\bar{N}}(-N + 229) + B_{\bar{N}}(-N + 167) = (2N + 65) + 0 + 0 = \mathbf{2N} + \mathbf{65} \\
&(N \geq 229)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(\mathbf{2N} + \mathbf{231}) &= B_{\bar{N}}(2N + 231 - B_{\bar{N}}(2N + 230)) + B_{\bar{N}}(2N + 231 - B_{\bar{N}}(2N + 229)) + B_{\bar{N}}(2N + 231 - B_{\bar{N}}(2N + 228)) \\
&= B_{\bar{N}}(2N + 231 - (2N + 65)) + B_{\bar{N}}(2N + 231 - 7) + B_{\bar{N}}(2N + 231 - (3N + 1)) \\
&= B_{\bar{N}}(166) + B_{\bar{N}}(2N + 224) + B_{\bar{N}}(-N + 230) = 166 + (2N + 162) + 0 = \mathbf{2N} + \mathbf{328} \\
&(N \geq 230)
\end{aligned}$$



$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + \mathbf{232}) &= B_{\bar{N}}(2N + 232 - B_{\bar{N}}(2N + 231)) + B_{\bar{N}}(2N + 232 - B_{\bar{N}}(2N + 230)) + B_{\bar{N}}(2N + 232 - B_{\bar{N}}(2N + 229)) \\
&= B_{\bar{N}}(2N + 232 - (2N + 328)) + B_{\bar{N}}(2N + 232 - (2N + 65)) + B_{\bar{N}}(2N + 232 - 7) \\
&= B_{\bar{N}}(-96) + B_{\bar{N}}(167) + B_{\bar{N}}(2N + 225) = 0 + 167 + (N + 221) = \mathbf{N} + \mathbf{388} \\
&(N \geq 167)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + \mathbf{233}) &= B_{\bar{N}}(2N + 233 - B_{\bar{N}}(2N + 232)) + B_{\bar{N}}(2N + 233 - B_{\bar{N}}(2N + 231)) + B_{\bar{N}}(2N + 233 - B_{\bar{N}}(2N + 230)) \\
&= B_{\bar{N}}(2N + 233 - (N + 388)) + B_{\bar{N}}(2N + 233 - (2N + 328)) + B_{\bar{N}}(2N + 233 - (2N + 65)) \\
&= B_{\bar{N}}(N - 155) + B_{\bar{N}}(-95) + B_{\bar{N}}(168) = (N - 155) + 0 + 168 = \mathbf{N} + \mathbf{13} \\
&(N \geq 168)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + \mathbf{234}) &= B_{\bar{N}}(2N + 234 - B_{\bar{N}}(2N + 233)) + B_{\bar{N}}(2N + 234 - B_{\bar{N}}(2N + 232)) + B_{\bar{N}}(2N + 234 - B_{\bar{N}}(2N + 231)) \\
&= B_{\bar{N}}(2N + 234 - (N + 13)) + B_{\bar{N}}(2N + 234 - (N + 388)) + B_{\bar{N}}(2N + 234 - (2N + 328)) \\
&= B_{\bar{N}}(N + 221) + B_{\bar{N}}(N - 154) + B_{\bar{N}}(-94) = (2N + 107) + (N - 154) + 0 = \mathbf{3N} - \mathbf{47} \\
&(N \geq 155)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + \mathbf{235}) &= B_{\bar{N}}(2N + 235 - B_{\bar{N}}(2N + 234)) + B_{\bar{N}}(2N + 235 - B_{\bar{N}}(2N + 233)) + B_{\bar{N}}(2N + 235 - B_{\bar{N}}(2N + 232)) \\
&= B_{\bar{N}}(2N + 235 - (3N - 47)) + B_{\bar{N}}(2N + 235 - (N + 13)) + B_{\bar{N}}(2N + 235 - (N + 388)) \\
&= B_{\bar{N}}(-N + 282) + B_{\bar{N}}(N + 222) + B_{\bar{N}}(N - 153) = 0 + (2N + 24) + (N - 153) = \mathbf{3N} - \mathbf{129} \\
&(\mathbf{N} \geq \mathbf{282})
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + \mathbf{236}) &= B_{\bar{N}}(2N + 236 - B_{\bar{N}}(2N + 235)) + B_{\bar{N}}(2N + 236 - B_{\bar{N}}(2N + 234)) + B_{\bar{N}}(2N + 236 - B_{\bar{N}}(2N + 233)) \\
&= B_{\bar{N}}(2N + 236 - (3N - 129)) + B_{\bar{N}}(2N + 236 - (3N - 47)) + B_{\bar{N}}(2N + 236 - (N + 13)) \\
&= B_{\bar{N}}(-N + 365) + B_{\bar{N}}(-N + 283) + B_{\bar{N}}(N + 223) = 0 + 0 + (N - 2) = \mathbf{N} - \mathbf{2} \\
&(\mathbf{N} \geq \mathbf{365})
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 237) &= B_{\bar{N}}(2N + 237 - B_{\bar{N}}(2N + 236)) + B_{\bar{N}}(2N + 237 - B_{\bar{N}}(2N + 235)) + B_{\bar{N}}(2N + 237 - B_{\bar{N}}(2N + 234)) \\
&= B_{\bar{N}}(2N + 237 - (N - 2)) + B_{\bar{N}}(2N + 237 - (3N - 129)) + B_{\bar{N}}(2N + 237 - (3N - 47)) \\
&= B_{\bar{N}}(N + 239) + B_{\bar{N}}(-N + 366) + B_{\bar{N}}(-N + 284) = (N + 240) + 0 + 0 = \mathbf{N} + 240 \\
&(\mathbf{N} \geq 366)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 238) &= B_{\bar{N}}(2N + 238 - B_{\bar{N}}(2N + 237)) + B_{\bar{N}}(2N + 238 - B_{\bar{N}}(2N + 236)) + B_{\bar{N}}(2N + 238 - B_{\bar{N}}(2N + 235)) \\
&= B_{\bar{N}}(2N + 238 - (N + 240)) + B_{\bar{N}}(2N + 238 - (N - 2)) + B_{\bar{N}}(2N + 238 - (3N - 129)) \\
&= B_{\bar{N}}(N - 2) + B_{\bar{N}}(N + 240) + B_{\bar{N}}(-N + 367) = (N - 2) + (N + 242) + 0 = 2\mathbf{N} + 240 \\
&(\mathbf{N} \geq 367)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 239) &= B_{\bar{N}}(2N + 239 - B_{\bar{N}}(2N + 238)) + B_{\bar{N}}(2N + 239 - B_{\bar{N}}(2N + 237)) + B_{\bar{N}}(2N + 239 - B_{\bar{N}}(2N + 236)) \\
&= B_{\bar{N}}(2N + 239 - (2N + 240)) + B_{\bar{N}}(2N + 239 - (N + 240)) + B_{\bar{N}}(2N + 239 - (N - 2)) \\
&= B_{\bar{N}}(-1) + B_{\bar{N}}(N - 1) + B_{\bar{N}}(N + 241) = 0 + (N - 1) + 7 = \mathbf{N} + 6 \\
&(N \geq 2)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 240) &= B_{\bar{N}}(2N + 240 - B_{\bar{N}}(2N + 239)) + B_{\bar{N}}(2N + 240 - B_{\bar{N}}(2N + 238)) + B_{\bar{N}}(2N + 240 - B_{\bar{N}}(2N + 237)) \\
&= B_{\bar{N}}(2N + 240 - (N + 6)) + B_{\bar{N}}(2N + 240 - (2N + 240)) + B_{\bar{N}}(2N + 240 - (N + 240)) \\
&= B_{\bar{N}}(N + 234) + B_{\bar{N}}(0) + B_{\bar{N}}(N) = 7 + 0 + N = \mathbf{N} + 7 \\
&(N \geq 1)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 241) &= B_{\bar{N}}(2N + 241 - B_{\bar{N}}(2N + 240)) + B_{\bar{N}}(2N + 241 - B_{\bar{N}}(2N + 239)) + B_{\bar{N}}(2N + 241 - B_{\bar{N}}(2N + 238)) \\
&= B_{\bar{N}}(2N + 241 - (N + 7)) + B_{\bar{N}}(2N + 241 - (N + 6)) + B_{\bar{N}}(2N + 241 - (2N + 240)) \\
&= B_{\bar{N}}(N + 234) + B_{\bar{N}}(N + 235) + B_{\bar{N}}(1) = 7 + (2N + 111) + 1 = 2\mathbf{N} + 119 \\
&(N \geq 1)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + \mathbf{242}) &= B_{\bar{N}}(2N + 242 - B_{\bar{N}}(2N + 241)) + B_{\bar{N}}(2N + 242 - B_{\bar{N}}(2N + 240)) + B_{\bar{N}}(2N + 242 - B_{\bar{N}}(2N + 239)) \\
&= B_{\bar{N}}(2N + 242 - (2N + 119)) + B_{\bar{N}}(2N + 242 - (N + 7)) + B_{\bar{N}}(2N + 242 - (N + 6)) \\
&= B_{\bar{N}}(123) + B_{\bar{N}}(N + 235) + B_{\bar{N}}(N + 236) = 123 + (2N + 111) + (2N + 26) = \mathbf{4N} + \mathbf{260} \\
&(N \geq 123)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + \mathbf{243}) &= B_{\bar{N}}(2N + 243 - B_{\bar{N}}(2N + 242)) + B_{\bar{N}}(2N + 243 - B_{\bar{N}}(2N + 241)) + B_{\bar{N}}(2N + 243 - B_{\bar{N}}(2N + 240)) \\
&= B_{\bar{N}}(2N + 243 - (4N + 260)) + B_{\bar{N}}(2N + 243 - (2N + 119)) + B_{\bar{N}}(2N + 243 - (N + 7)) \\
&= B_{\bar{N}}(-2N - 17) + B_{\bar{N}}(124) + B_{\bar{N}}(N + 236) = 0 + 124 + (2N + 26) = \mathbf{2N} + \mathbf{150} \\
&(N \geq 124)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + \mathbf{244}) &= B_{\bar{N}}(2N + 244 - B_{\bar{N}}(2N + 243)) + B_{\bar{N}}(2N + 244 - B_{\bar{N}}(2N + 242)) + B_{\bar{N}}(2N + 244 - B_{\bar{N}}(2N + 241)) \\
&= B_{\bar{N}}(2N + 244 - (2N + 150)) + B_{\bar{N}}(2N + 244 - (4N + 260)) + B_{\bar{N}}(2N + 244 - (2N + 119)) \\
&= B_{\bar{N}}(94) + B_{\bar{N}}(-2N - 16) + B_{\bar{N}}(125) = 94 + 0 + 125 = \mathbf{219} \\
&(N \geq 125)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + \mathbf{245}) &= B_{\bar{N}}(2N + 245 - B_{\bar{N}}(2N + 244)) + B_{\bar{N}}(2N + 245 - B_{\bar{N}}(2N + 243)) + B_{\bar{N}}(2N + 245 - B_{\bar{N}}(2N + 242)) \\
&= B_{\bar{N}}(2N + 245 - 219) + B_{\bar{N}}(2N + 245 - (2N + 150)) + B_{\bar{N}}(2N + 245 - (4N + 260)) \\
&= B_{\bar{N}}(2N + 26) + B_{\bar{N}}(95) + B_{\bar{N}}(-2N - 15) = (N + 28) + 95 + 0 = \mathbf{N} + \mathbf{123} \\
&(N \geq 95)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + \mathbf{246}) &= B_{\bar{N}}(2N + 246 - B_{\bar{N}}(2N + 245)) + B_{\bar{N}}(2N + 246 - B_{\bar{N}}(2N + 244)) + B_{\bar{N}}(2N + 246 - B_{\bar{N}}(2N + 243)) \\
&= B_{\bar{N}}(2N + 246 - (N + 123)) + B_{\bar{N}}(2N + 246 - 219) + B_{\bar{N}}(2N + 246 - (2N + 150)) \\
&= B_{\bar{N}}(N + 123) + B_{\bar{N}}(2N + 27) + B_{\bar{N}}(96) = (2N + 79) + (2N + 13) + 96 = \mathbf{4N} + \mathbf{188} \\
&(N \geq 96)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 247) &= B_{\bar{N}}(2N + 247 - B_{\bar{N}}(2N + 246)) + B_{\bar{N}}(2N + 247 - B_{\bar{N}}(2N + 245)) + B_{\bar{N}}(2N + 247 - B_{\bar{N}}(2N + 244)) \\
&= B_{\bar{N}}(2N + 247 - (4N + 188)) + B_{\bar{N}}(2N + 247 - (N + 123)) + B_{\bar{N}}(2N + 247 - 219) \\
&= B_{\bar{N}}(-2N + 59) + B_{\bar{N}}(N + 124) + B_{\bar{N}}(2N + 28) = 0 + (2N + 10) + (N + 24) = \mathbf{3N} + \mathbf{34} \\
&(N \geq 30)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 248) &= B_{\bar{N}}(2N + 248 - B_{\bar{N}}(2N + 247)) + B_{\bar{N}}(2N + 248 - B_{\bar{N}}(2N + 246)) + B_{\bar{N}}(2N + 248 - B_{\bar{N}}(2N + 245)) \\
&= B_{\bar{N}}(2N + 248 - (3N + 34)) + B_{\bar{N}}(2N + 248 - (4N + 188)) + B_{\bar{N}}(2N + 248 - (N + 123)) \\
&= B_{\bar{N}}(-N + 214) + B_{\bar{N}}(-2N + 60) + B_{\bar{N}}(N + 125) = 0 + 0 + (N - 2) = \mathbf{N} - \mathbf{2} \\
&(N \geq 214)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 249) &= B_{\bar{N}}(2N + 249 - B_{\bar{N}}(2N + 248)) + B_{\bar{N}}(2N + 249 - B_{\bar{N}}(2N + 247)) + B_{\bar{N}}(2N + 249 - B_{\bar{N}}(2N + 246)) \\
&= B_{\bar{N}}(2N + 249 - (N - 2)) + B_{\bar{N}}(2N + 249 - (3N + 34)) + B_{\bar{N}}(2N + 249 - (4N + 188)) \\
&= B_{\bar{N}}(N + 251) + B_{\bar{N}}(-N + 215) + B_{\bar{N}}(-2N + 61) = (N - 2) + 0 + 0 = \mathbf{N} - \mathbf{2} \\
&(N \geq 215)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 250) &= B_{\bar{N}}(2N + 250 - B_{\bar{N}}(2N + 249)) + B_{\bar{N}}(2N + 250 - B_{\bar{N}}(2N + 248)) + B_{\bar{N}}(2N + 250 - B_{\bar{N}}(2N + 247)) \\
&= B_{\bar{N}}(2N + 250 - (N - 2)) + B_{\bar{N}}(2N + 250 - (N - 2)) + B_{\bar{N}}(2N + 250 - (3N + 34)) \\
&= B_{\bar{N}}(N + 252) + B_{\bar{N}}(N + 252) + B_{\bar{N}}(-N + 216) = 254 + 254 + 0 = \mathbf{508} \\
&(N \geq 216)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(2\mathbf{N} + 251) &= B_{\bar{N}}(2N + 251 - B_{\bar{N}}(2N + 250)) + B_{\bar{N}}(2N + 251 - B_{\bar{N}}(2N + 249)) + B_{\bar{N}}(2N + 251 - B_{\bar{N}}(2N + 248)) \\
&= B_{\bar{N}}(2N + 251 - 508) + B_{\bar{N}}(2N + 251 - (N - 2)) + B_{\bar{N}}(2N + 251 - (N - 2)) \\
&= B_{\bar{N}}(2N - 257) + B_{\bar{N}}(N + 253) + B_{\bar{N}}(N + 253) = 7 + (N + 254) + (N + 254) = \mathbf{2N} + \mathbf{515} \\
&(N \geq 324)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(\mathbf{2N} + \mathbf{252}) &= B_{\bar{N}}(2N + 252 - B_{\bar{N}}(2N + 251)) + B_{\bar{N}}(2N + 252 - B_{\bar{N}}(2N + 250)) + B_{\bar{N}}(2N + 252 - B_{\bar{N}}(2N + 249)) \\
&= B_{\bar{N}}(2N + 252 - (2N + 515)) + B_{\bar{N}}(2N + 252 - 508) + B_{\bar{N}}(2N + 252 - (N - 2)) \\
&= B_{\bar{N}}(-263) + B_{\bar{N}}(2N - 256) + B_{\bar{N}}(N + 254) = 0 + \left( \frac{16N}{7} - \frac{205}{7} \right) + (N + 256) = \frac{\mathbf{23N}}{\mathbf{7}} + \frac{\mathbf{1587}}{\mathbf{7}} \\
&(N \geq 323)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(\mathbf{2N} + \mathbf{253}) &= B_{\bar{N}}(2N + 253 - B_{\bar{N}}(2N + 252)) + B_{\bar{N}}(2N + 253 - B_{\bar{N}}(2N + 251)) + B_{\bar{N}}(2N + 253 - B_{\bar{N}}(2N + 250)) \\
&= B_{\bar{N}}\left(2N + 253 - \left(\frac{23N}{7} + \frac{1587}{7}\right)\right) + B_{\bar{N}}(2N + 253 - (2N + 515)) + B_{\bar{N}}(2N + 253 - 508) \\
&= B_{\bar{N}}\left(-\frac{9N}{7} + \frac{184}{7}\right) + B_{\bar{N}}(-262) + B_{\bar{N}}(2N - 255) = 0 + 0 + \left(\frac{15N}{7} - \frac{309}{7}\right) = \frac{\mathbf{15N}}{\mathbf{7}} - \frac{\mathbf{309}}{\mathbf{7}} \\
&(N \geq 322)
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{\bar{N}}(\mathbf{2N} + \mathbf{254}) &= B_{\bar{N}}(2N + 254 - B_{\bar{N}}(2N + 253)) + B_{\bar{N}}(2N + 254 - B_{\bar{N}}(2N + 252)) + B_{\bar{N}}(2N + 254 - B_{\bar{N}}(2N + 251)) \\
&= B_{\bar{N}}\left(2N + 254 - \left(\frac{15N}{7} - \frac{309}{7}\right)\right) + B_{\bar{N}}\left(2N + 254 - \left(\frac{23N}{7} + \frac{1587}{7}\right)\right) + B_{\bar{N}}(2N + 254 - (2N + 515)) \\
&= B_{\bar{N}}\left(-\frac{N}{7} + \frac{2087}{7}\right) + B_{\bar{N}}\left(-\frac{9N}{7} + \frac{191}{7}\right) + B_{\bar{N}}(-261) = 0 + 0 + 0 = \mathbf{0} \\
&(\mathbf{N} \geq \mathbf{2087})
\end{aligned}$$