$$
\begin{aligned}
b_0 &= \frac{1}{1}\omega^0\\
b_1 &= \frac{1}{4\pi^1}i\omega^1\\
b_2 &= \frac{-3}{32\pi^2}\omega^2\\
b_3 &= \frac{-5}{128\pi^3}i\omega^3 + \frac{-1}{12\pi^2}\omega^1\\
b_4 &= \frac{35}{2048\pi^4}\omega^4 + \frac{-5}{96\pi^3}i\omega^2\\
b_5 &= \frac{63}{8192\pi^5}i\omega^5 + \frac{9}{320\pi^4}\omega^3\\
b_6 &= \frac{-231}{65536\pi^6}\omega^6 + \frac{223}{15360\pi^5}i\omega^4 + \frac{1}{288\pi^4}\omega^2\\
b_7 &= \frac{-429}{262144\pi^7}i\omega^7 + \frac{-6323}{860160\pi^6}\omega^5 + \frac{1}{288\pi^5}i\omega^3\\
b_8 &= \frac{6435}{8388608\pi^8}\omega^8 + \frac{-1691}{458752\pi^7}i\omega^6 + \frac{-77}{30720\pi^6}\omega^4\\
b_9 &= \frac{12155}{33554432\pi^9}i\omega^9 + \frac{7591}{4128768\pi^8}\omega^7 + \frac{-13}{8192\pi^7}i\omega^5 + \frac{-1}{10368\pi^6}\omega^3
\end{aligned}
$$

$$
\begin{aligned}
c_0 &= \frac{1}{1}\Psi^{(0)}(p)\\
c_1 &= \frac{1}{2}\Psi^{(1)}(p)\\
c_2 &= \frac{1}{4}\Psi^{(2)}(p) + \frac{1}{1}\pi^1 i\Psi^{(0)}(p)\\
c_3 &= \frac{1}{8}\Psi^{(3)}(p) + \frac{3}{2}\pi^1 i\Psi^{(1)}(p)\\
c_4 &= \frac{1}{16}\Psi^{(4)}(p) + \frac{3}{2}\pi^1 i\Psi^{(2)}(p) + \frac{-3}{1}\pi^2\Psi^{(0)}(p)\\
c_5 &= \frac{1}{32}\Psi^{(5)}(p) + \frac{5}{4}\pi^1 i\Psi^{(3)}(p) + \frac{-15}{2}\pi^2\Psi^{(1)}(p)\\
c_6 &= \frac{1}{64}\Psi^{(6)}(p) + \frac{15}{16}\pi^1 i\Psi^{(4)}(p) + \frac{-45}{4}\pi^2\Psi^{(2)}(p) + \frac{-15}{1}\pi^3 i\Psi^{(0)}(p)\\
c_7 &= \frac{1}{128}\Psi^{(7)}(p) + \frac{21}{32}\pi^1 i\Psi^{(5)}(p) + \frac{-105}{8}\pi^2\Psi^{(3)}(p) + \frac{-105}{2}\pi^3 i\Psi^{(1)}(p)\\
c_8 &= \frac{1}{256}\Psi^{(8)}(p) + \frac{7}{16}\pi^1 i\Psi^{(6)}(p) + \frac{-105}{8}\pi^2\Psi^{(4)}(p) + \frac{-105}{1}\pi^3 i\Psi^{(2)}(p) + \frac{105}{1}\pi^4\Psi^{(0)}(p)\\
c_9 &= \frac{1}{512}\Psi^{(9)}(p) + \frac{9}{32}\pi^1 i\Psi^{(7)}(p) + \frac{-189}{16}\pi^2\Psi^{(5)}(p) + \frac{-315}{2}\pi^3 i\Psi^{(3)}(p) + \frac{945}{2}\pi^4\Psi^{(1)}(p)
\end{aligned}
$$

$$
\begin{aligned}
C_0 &= \frac{1}{1}\Psi^{(0)}(p) \\
C_1 &= \frac{-1}{96\pi^2}\Psi^{(3)}(p) \\
C_2 &= \frac{1}{18432\pi^4}\Psi^{(6)}(p) + \frac{1}{64\pi^2}\Psi^{(2)}(p) + \frac{1}{96\pi^1}i\Psi^{(0)}(p) \\
C_3 &= \frac{-1}{5308416\pi^6}\Psi^{(9)}(p) + \frac{-1}{3840\pi^4}\Psi^{(5)}(p) + \frac{-1}{9216\pi^3}i\Psi^{(3)}(p) + \frac{-1}{64\pi^2}\Psi^{(1)}(p) \\
C_4 &= \frac{1}{2038431744\pi^8}\Psi^{(12)}(p) + \frac{11}{5898240\pi^6}\Psi^{(8)}(p) + \frac{1}{1769472\pi^5}i\Psi^{(6)}(p) \\
&+ \frac{19}{24576\pi^4}\Psi^{(4)}(p) + \frac{1}{6144\pi^3}i\Psi^{(2)}(p) + \frac{143}{18432\pi^2}\Psi^{(0)}(p) \\
C_5 &= \frac{-1}{978447237120\pi^{10}}\Psi^{(15)}(p) + \frac{-7}{849346560\pi^8}\Psi^{(11)}(p) + \frac{-1}{509607936\pi^7}i\Psi^{(9)}(p) \\
&+ \frac{-901}{82575360\pi^6}\Psi^{(7)}(p) + \frac{-1}{368640\pi^5}i\Psi^{(5)}(p) + \frac{-2879}{1769472\pi^4}\Psi^{(3)}(p) + \frac{-1}{6144\pi^3}i\Psi^{(1)}(p)
\end{aligned}
$$