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On the representation of integers by binary forms defined by means of the relation $(x+yi)^n = R_n(x,y) + J_n(x,y)i$

Let F be a binary form with integer coefficients, degree $d \geq 3$ and non-zero discriminant. Let $R_F(Z)$ denote the number of integers of absolute value at most Z which are represented by F. In 2019 Stewart and Xiao proved that $R_F(Z) \sim C_F Z^{2/d}$ for some positive number C_F. We compute C_{R_n} and C_{J_n} for the binary forms $R_n(x,y)$ and $J_n(x,y)$ defined by means of the relation

$$(x+yi)^n = R_n(x,y) + J_n(x,y)i,$$

where the variables x and y are real.