

$$\begin{aligned}
 f(z) &= iz^3 + z = i(x+yi)^3 + x+yi = \\
 &= i(x^3 + 3x^2yi - 3y^2x - iy^3) + x+yi = \\
 &= ix^3 - 3x^2y - 3iy^2x + y^3 + x + yi = \\
 &= -3x^2y + y^3 + x + i(x^3 - 3y^2x + y) \\
 \operatorname{Re} z &= -3x^2y + y^3 + x \quad \operatorname{Im} z = x^3 - 3y^2x + y
 \end{aligned}$$