



FIGURE 10.5.1 The black at center is the Mandelbrot set M , the object that lives in the parameter space for quadratic polynomials. Every point $c \in \mathbb{C}$ corresponds to a filled Julia set K_c : the set of $z \in \mathbb{C}$ such that the sequence $z, p_c(z), p_c^2(z), \dots$ is bounded, where $p_c(z) = z^2 + c$. We show the Julia sets corresponding to six such points c . For 2 and 6, c is not in M , and K_c is a Cantor set; for the others, c is in M , and K_c is connected. For 3, $c = -2$. In the pictures 1–6, the colors indicate the rate of escape; gold points escape faster than red.