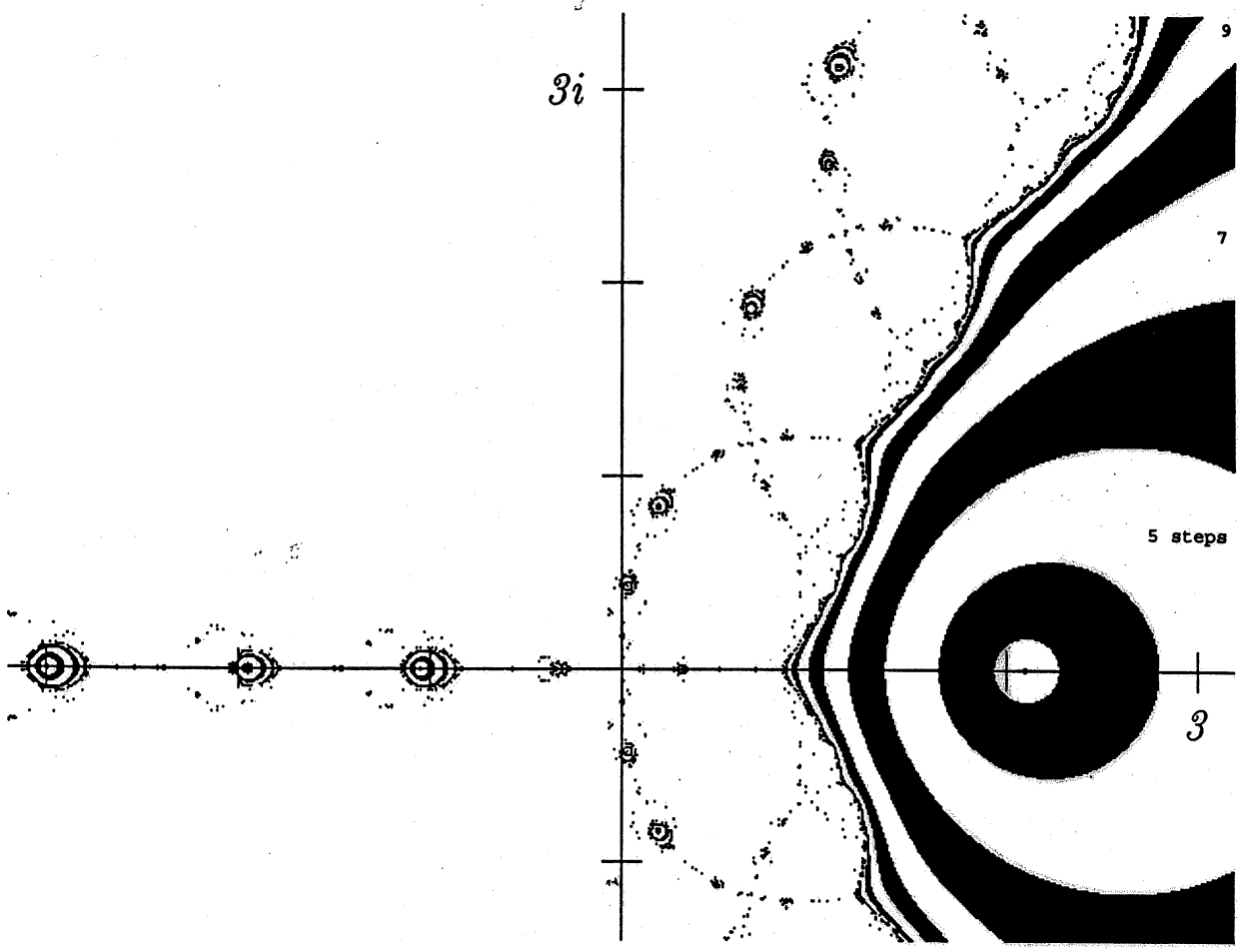
18.04 Handout Mon 15 Sep 03

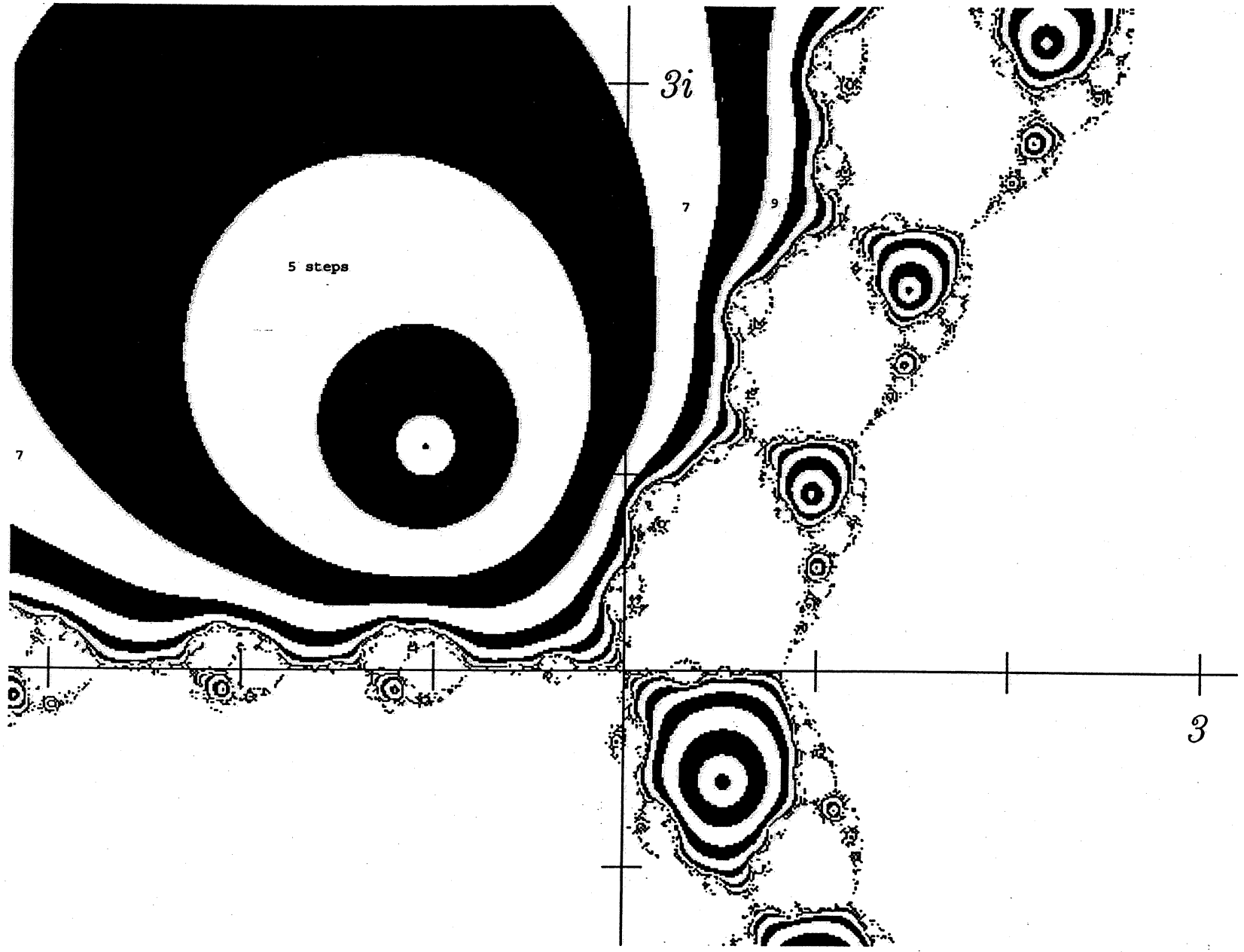
The **DARK** points in the diagram below mark locations in the z-plane from which the **complex Newton iteration** applied to the **Wallis equation**

$$z^3 - 2z - 5 = 0$$

needs an **EVEN** number of steps to converge to the <u>real</u> root $z_1 \approx 2.094\ 551\ 482$ to an absolute accuracy $|\Delta z| < 1.0e\text{-}8$.



The diagram on the opposite side reports similarly for the <u>complex</u> root $z_2 \approx -1.047\ 275\ 741 + 1.135\ 939\ 889\ i$.


3i
7
9
5 steps
7
3