

Panel 10

Home work

① Factor the polynomials

a) $z^4 + 4$ b) $z^2 + (1+i)z + 5i$

c) $P(z) = z^3 + (3+3i)z^2 + (-1+6i)z + 3-i$ (show that $P(i) = 0$)
 \leftarrow closed disk

② Let f be non-constant, analytic in $\overline{D_1(0)}$. Assume that

$|f(z)| = k$ for $z \in C_1(0)$. Show that f has a zero in D .

(Hint: Use the max. principle for f and also - assumingthere was no zero - for $1/f$)