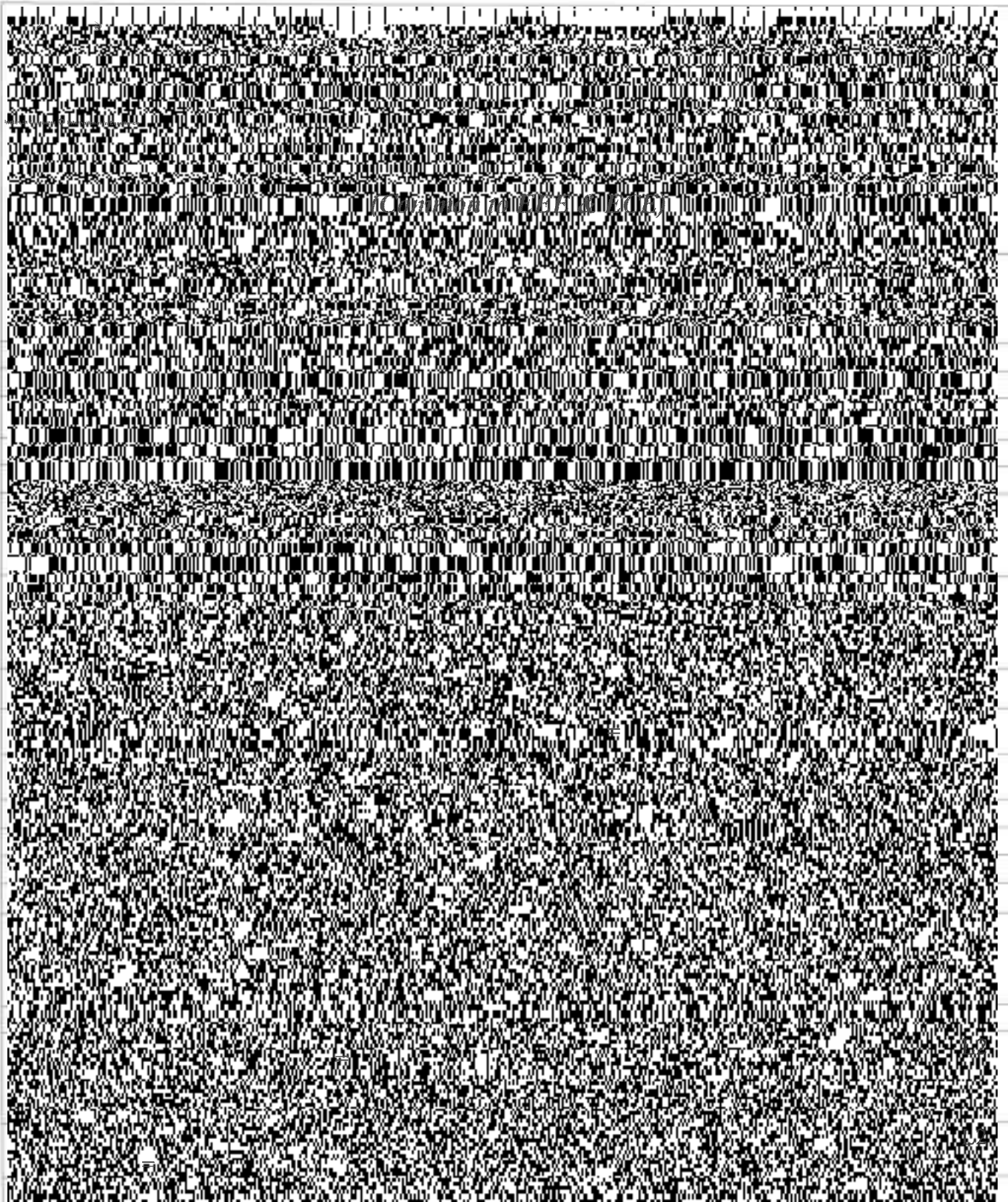




14	Prove that the function $f(z)$ defined by $f(z) = \begin{cases} \frac{x^3(1+i)-y^3(1-i)}{x^2+y^2} & z \neq 0 \\ 0 & z = 0 \end{cases}$ is continuous and the C-R equations are satisfied at the origin yet $f'(0)$ does not exist.	10M	2	L2
15	State and prove Cauchy's integral formula	10M	3	L2
	OR			
16	Evaluate the integrals around $c: z-1 =3$ i) $\int_c \frac{e^z}{(z+1)^2} dz$ ii) $\int_c \frac{e^z}{(z+1)^4} dz$	10M	3	L2
17	Evaluate $\int_c \frac{4-3z}{z(z-1)(z-2)} dz$; where c is the circle $ z =\frac{3}{2}$. using residue theorem	10M	4	L2
	OR			
18	Use the method of contour integration to evaluate $\int_0^\infty \frac{dx}{x^4+a^4}$	10M	4	L2
19	Show that the transformation $w = \frac{iz+2}{4z+i}$ transforms the real axis in the z -plane into a circle in the w -plane	10M	5	L2
	OR			
20	Find the bilinear Transformation that maps the points $(0,-i,-1)$ into the points $(i,1,0)$.	10M	5	L2