

7.

$$f(z) = z^3 + z^2 + pz + q$$

where p and q are real constants.

The equation $f(z) = 0$ has roots z_1 , z_2 and z_3

When plotted on an Argand diagram, the points representing z_1 , z_2 and z_3 form the vertices of a triangle of area 35

Given that $z_1 = 3$, find the values of p and q .

(7)