**Roots of Quartics**



**Example**

**Find the quartic equation with roots 1, -2 and 3 (repeated).**

**Example**

**The equation** $x^{4}+2x^{3}+px^{2}+qx-60=0, x\in C, p,q\in R$**, has roots** $α, β,γ,δ$**. Given that** $γ=-2+4i$ **and** $δ=γ^{\*}$**.**

1. **Show that** $α+β-2=0$ **and that** $αβ+3=0$
2. **Hence find all the roots of the quartic equation and find the values of** $p$ **and** $q$**.**

Ex 4C pg 60-61