

4. The cubic equation

$$x^3 + 3x^2 - 8x + 6 = 0$$

has roots  $\alpha$ ,  $\beta$  and  $\gamma$ .

Without solving the equation, find the cubic equation whose roots are  $(\alpha - 1)$ ,  $(\beta - 1)$  and  $(\gamma - 1)$ , giving your answer in the form  $w^3 + pw^2 + qw + r = 0$ , where  $p$ ,  $q$  and  $r$  are integers to be found.

(5)