

1. The roots of the equation

$$x^3 - 8x^2 + 28x - 32 = 0$$

are  $\alpha$ ,  $\beta$  and  $\gamma$

Without solving the equation, find the value of

(i)  $\frac{1}{\alpha} + \frac{1}{\beta} + \frac{1}{\gamma}$

(ii)  $(\alpha + 2)(\beta + 2)(\gamma + 2)$

(iii)  $\alpha^2 + \beta^2 + \gamma^2$