Product of zeroes = $\frac{-1}{3}\times\frac{3}{2}=\frac{-1}{2}=\frac{-3}{6}=\frac{\text{Constant term}}{\text{Coefficient of } x^2}$

(iv) $4u^2+8u=4u^2+8u+0$

$=4u(u+2)$

The value of $4u^2+8u$ is zero when $4u=0$ or $u+2=0$, i.e., $u=0$ or $u=-2$

Therefore, the zeroes of $4u^2+8u$ are 0 and - 2.

Sum of zeroes = $0+(-2)=-2=\frac{-(8)}{4}=\frac{-(\text{Coefficient of } u)}{\text{Coefficient of } u^2}$

Product of zeroes = $0\times(-2)=0=\frac{0}{4}=\frac{\text{Constant term}}{\text{Coefficient of } u^2}$

(v) t^2-15

$=t^2-0t-15$

$=(t-\sqrt{15})(t+\sqrt{15})$

The value of t^2-15 is zero when $t-\sqrt{15}=0$ or $t+\sqrt{15}=0$, i.e., when

Q2 :

Find a quadratic polynomial each with the given numbers as the sum and product of its zeroes respectively.

(i) $\frac{1}{4}$, -1 (ii) $\sqrt{2}, \frac{1}{3}$ (iii) $0, \sqrt{5}$

(iv) 1,1 (v) $-\frac{1}{4}, \frac{1}{4}$ (vi) 4,1

Answer :

(i) $\frac{1}{4}, -1$

Let the polynomial be ax^2+bx+c, and its zeroes be α and β.