

$$6. x^4 + x + 1 = 0 \dots (*)$$

Sol. $\Rightarrow y = x^2 - 3$ 代 $x (*)$

$$x^2 = y + 3 \Rightarrow x = \pm \sqrt{y + 3}$$

$$x^4 = (y + 3)^2$$

$$(y + 3)^2 \pm \sqrt{y + 3} + 1 = 0$$

$$\Rightarrow y^2 + 6y + 10 = \mp \sqrt{y + 3}$$

$$\Rightarrow (y^2 + 6y + 10)^2 = y + 3$$

$$\Rightarrow y^4 + 36y^2 + 100 + 12y^3 + 120y + 20y^2 - 3 - y = 0$$

$$\Rightarrow y^4 + 12y^3 + 56y^2 + 119y + 97 = 0$$

$$\therefore y_1 \cdot y_2 \cdot y_3 \cdot y_4 = 97$$

$$A = 97$$