

أهلاً بالزوار ، نأذهم بضمير « شأننا » ، تأليف ١٤

$$y = -x^2 + bx + 3$$

$$y_s = \frac{-\Delta}{2a} = \frac{-(b^2 + 12)}{-2} = 1 \rightarrow b^2 + 12 = 2 \rightarrow b^2 = 10 \rightarrow b = \pm \sqrt{10}$$

$$\text{الف) } f(x) = x^4 + 2x^2 + 3$$

$$t = x^2 \rightarrow t^2 + 2t + 3 = 0$$

$$\Delta = b^2 - 4ac \rightarrow 4 - 12 < 0$$

جواب حقيقي ندارد / شبه ندارد

$$\text{ب) } f(x) = (x^2 - 5)^2 - 2(x^2 - 5) - 10$$

$$x^2 - 5 = t \rightarrow t^2 - 2t - 10 = 0$$

$$(t - 5)(t + 3) = 0$$

$$t = 5 \rightarrow x^2 - 5 = 5 \rightarrow x^2 = 10 \rightarrow x = \pm \sqrt{10}$$

$$t = -3 \rightarrow x^2 - 5 = -3 \rightarrow x^2 = 2 \rightarrow x = \pm \sqrt{2}$$

$$2x^2 - 14x + m = 0$$

$$\text{نسبة } \rightarrow \alpha, \alpha + 2 \rightarrow \beta$$

$$S = \frac{-b}{a} \rightarrow 2(\alpha + 1) = \frac{14}{2} = 7 \rightarrow \alpha = 1$$

$$\beta = 3$$

$$P = \frac{c}{a} \rightarrow \frac{m}{2} = 1 \times 2 \rightarrow m = 4$$

$$2x^2 - 14x + m - 1 = 0$$

$$2\alpha - \beta = 7$$

$$2\alpha - \beta = 7 \rightarrow 2\alpha + 2\beta - 3\beta = 7$$

$$S = \frac{-b}{2a} = 2 : \alpha + \beta$$

$$2(\alpha + \beta) - 3\beta = 7$$

$$2 - 3\beta = 7 \rightarrow \beta = -5$$

$$\alpha + \beta = 2 \rightarrow \alpha = 7$$

$$-mx^r + rx + m^r y = 0$$

$$\left\{ \begin{array}{l} p=1 \rightarrow \frac{c}{a}=1 \rightarrow \frac{m^r - r}{-m}=1 \rightarrow m^r + m - r = 0 \\ \Delta > 0 \end{array} \right.$$

$$(m+r)(m-1)=0$$

$$m=1 \rightarrow -x^r + rx - 1 = 0 \quad \Delta = 1^2 - 4(-1)(1) = 5$$

$$m=-1 \rightarrow rx^r + rx + 2 = 0 \quad \Delta = 1^2 - 4(1)(2) = -7$$

$$x^r - mx + r = 0 \quad \alpha\beta = r$$

$$p = \alpha\beta = \frac{c}{a} = r$$

$$\alpha\beta = r \rightarrow (\alpha\beta) \times \beta = r \rightarrow r \times \beta = r \rightarrow \beta = \frac{r}{r}$$

$$s = \alpha + \beta = -\frac{b}{a}$$

$$r \times \frac{r}{r} = r \rightarrow \alpha = \frac{r}{r}$$

$$\frac{r}{r} + \frac{r}{r} = m \rightarrow m = \frac{2r}{r}$$

$$x^r - rx + m = 0 \quad \omega \rightarrow \alpha, \beta = r\alpha$$

$$\rightarrow r\alpha = r \quad \alpha = 1, \quad \beta = r\alpha = r$$

$$p = \frac{c}{a} = \alpha\beta \rightarrow m = r$$

$$x^r - vx + r = 0 \quad \alpha^r + \frac{1}{\alpha^r} = p \quad \alpha^r - vx + r = 0 \rightarrow \alpha^r + r = vx \quad \wedge$$

$$\alpha^r + \frac{1}{\alpha^r} = (\alpha)^r + \left(\frac{r}{\alpha}\right)^r = \left(\alpha + \frac{r}{\alpha}\right) \left(\alpha^r + \frac{r}{\alpha^r} - r\right)$$

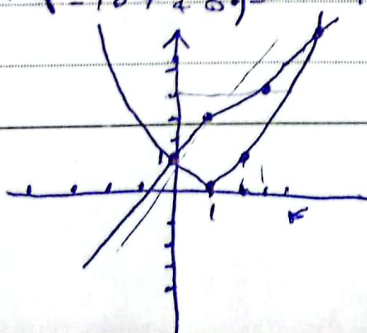
$$\alpha + \frac{r}{\alpha} = \frac{\alpha^r + r}{\alpha} = \frac{vx}{\alpha} = v \quad \alpha^r + \frac{r}{\alpha^r} = \frac{\alpha^r + r}{\alpha^r} = \frac{(\alpha + \frac{r}{\alpha})^r - r\alpha^r}{\alpha^r} = \frac{(\alpha + \frac{r}{\alpha})^r}{\alpha^r} - \frac{r\alpha^r}{\alpha^r} =$$

$$\rightarrow \left(\alpha + \frac{r}{\alpha}\right) \left(\alpha^r + \frac{r}{\alpha^r} - r\right) = vx \left(\frac{r}{\alpha} - r\right) = \boxed{r\alpha}$$

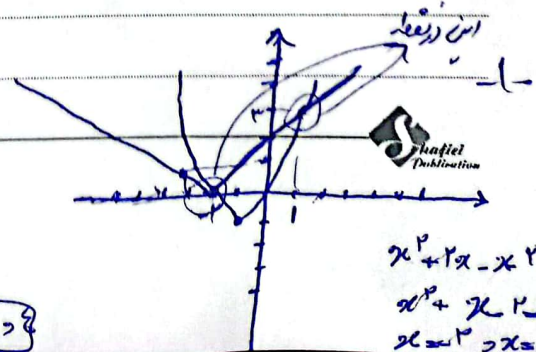
$$= -1\alpha + 0\alpha = -\alpha \rightarrow \alpha = -\frac{b}{a} = -\frac{0}{1} = 0$$

$$-1\alpha + 0\alpha = 0$$

$$t(-1\alpha + 0\alpha) = 0 \quad t=0, t=0.5$$



$$\begin{aligned} x^r - rx + 1 &= rx + 1 \\ x^r - rx &= 0 \\ x(x-r) &= 0 \quad \Delta = 0 > 0 \end{aligned}$$



$$\begin{aligned} x^r + rx - x^r &= 0 \\ x^r + rx - r &= 0 \\ x = r > 0 \end{aligned}$$