

معمولاً
نکته ۱۳

لیت

نکته مهم الی

سوال (۱)

$$-\frac{b}{1a} = -1 \Rightarrow b = 1a$$

$$y = ax^2 + \frac{b}{1a}x + c$$

~~$$y = ax^2 + bx + c$$~~

$$y = ax^2 + 1ax + c$$

$$\Rightarrow q = a - 1a + c \Rightarrow q = -a + c$$

$$\Rightarrow 1 = 9a + 9a + c \Rightarrow 1 = 18a + c$$

$$\Rightarrow c = 9 + a \Rightarrow 9 + a = 1 - 18a$$

$$c = 1 - 18a \Rightarrow 19a = -1$$

$$\Rightarrow a = -\frac{1}{19}$$

$$\Rightarrow c = \frac{18}{19}$$

$$\Rightarrow b = -1$$

$$\Rightarrow y = -\frac{1}{19}x^2 - x + \frac{18}{19}$$

$$x^2 + mx + m + 4 = 0$$

سوال (۲)

$$\textcircled{1} p = \frac{c}{a} = \frac{m+4}{1} > 0 \Rightarrow m > -4$$

$$\textcircled{2} -\frac{b}{a} = 5 = \frac{-m}{1} > 0 \Rightarrow -m > 0 \Rightarrow m < 0$$

$$\textcircled{3} \Delta = b^2 - 4ac > 0 \Rightarrow m^2 - 4(m+4)(1) > 0 \Rightarrow$$

$$m^2 - 4m - 16 > 0 \Rightarrow \begin{array}{c|c|c} - & + & + \\ \hline + & - & + \end{array}$$

$$\textcircled{1} \cap \textcircled{2} \cap \textcircled{3} = -4 < m < -f \Rightarrow m = \left[-4, -f \right)$$

Arman

$$r^2 x^2 + (r^2 m - 1)x + 1 - m = 0$$

(سوال 13)

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

$$-\frac{b}{a} = \frac{a}{c} \Rightarrow a^2 = -bc \quad q = (1 - r^2 m)x + (1 - m) \Rightarrow$$

$$q = 1 - 2m + r^2 m^2 \Rightarrow$$

$$r^2 m^2 - 2m - 1 = 0$$

$$-1 + r^2 = -2$$

~~$$a = (1 - r^2 m)^2 - r^2 (1 - m) =$$~~

~~$$r^2 m^2 - 2m + 1 - r^2 + r^2 m =$$~~

~~$$r^2 m^2 + r^2 m - 2m + 1 - r^2 =$$~~

~~$$r^2 m^2 + r^2 m - 2m + 1 - r^2 =$$~~

~~$$r^2 m^2 + r^2 m - 2m + 1 - r^2 =$$~~

~~$$r^2 m^2 + r^2 m - 2m + 1 - r^2 =$$~~

~~$$r^2 m^2 + r^2 m - 2m + 1 - r^2 =$$~~

$$m \rightarrow -1 \quad \frac{v}{p} = r^2 d$$

$$r^2 x^2 + (r^2 d - 1)x + 1 - r^2 d = 0$$

$$m = r^2 d - 1 = \Delta \cdot d$$

$$m = r^2 d$$

$$r^2 x^2 + (r^2 d - 1)x + 1 - r^2 d = 0$$

$$\Delta = q - f(r)(r) < 0 \Rightarrow m \neq -1$$

$$x^2 - x - r = 0 \rightarrow S = 1 \quad P = -r$$

(سوال 14)

$$\alpha^r + \frac{1}{\beta}, \quad \beta^r + \frac{1}{\alpha}$$

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

$$\alpha^r + \beta^r = S^r - rP \leftarrow 1 - (r)(-r)$$

$$= -4r + \frac{-1}{r} + 1 + 1 = -2r - \frac{1}{r} = -\left(2r + \frac{1}{r}\right) = -\frac{r^2 + 1}{r}$$

$$\alpha^r + \frac{1}{\beta} + \beta^r + \frac{1}{\alpha} = \frac{1 - r(-r)(1) + \frac{\alpha + \beta}{\alpha\beta}}{S^r - rPS = \alpha^r + \beta^r} = 1^r + \frac{-1}{r} = \frac{r^2 - 1}{r} = S^r$$

$$y = x^r - Sx + P \Rightarrow y = x^r - \frac{r^2 - 1}{r}x - \frac{r^2 - 1}{r}$$

Arman

سوال (د)

$$x \sqrt[r]{x} - \cancel{\sqrt[r]{x^r}} + 1 - \frac{1}{\sqrt[r]{x^r}} + \cancel{\sqrt[r]{x^r}} - 1 = r \sqrt[r]{x}$$

$$\frac{x^r - 1}{\sqrt[r]{x^r}} = r \sqrt[r]{x} \Rightarrow x^r - 1 = r x \Rightarrow x^r - r x - 1 = 0$$

$$\Rightarrow S = x_1 + x_2 = \underline{r}$$

Arman

DATE

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Subject:

 $\alpha, r\alpha$

(4 سوال)

$$9(r\alpha^2 - a\alpha + r = 0)$$

$$r\alpha^2 - r\alpha + r = 0$$

~~$$r\alpha^2 - r\alpha + r = 0$$~~

$$-r\alpha + r = 0 \Rightarrow a\alpha = \frac{r}{9} \Rightarrow$$

$$a\alpha = \frac{14}{r}$$

$$r\alpha^2 - \frac{14}{r} + r = 0$$

$$\Rightarrow r\alpha^2 = \frac{14}{r} \Rightarrow \alpha^2 = \frac{14}{r^2} \Rightarrow \alpha = \pm \frac{\sqrt{14}}{r}$$

$$r\alpha^2 - a\alpha + r = 0 \longrightarrow$$

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

$$\beta = r\alpha = r$$

$$\} \Rightarrow S = \frac{1}{r} \quad P = \frac{r}{r}$$

$$\frac{+a}{r} = \frac{1}{r} \Rightarrow a = 1$$

$$\alpha = -\frac{r}{r}$$

$$\beta = -r$$

$$\} \Rightarrow P = \frac{r}{r} \quad S = -\frac{1}{r} \Rightarrow \frac{a}{r} = -\frac{1}{r} \Rightarrow a = -1$$

$$\Rightarrow \boxed{14 = a_1 \text{ و } a_2}$$

سوال ۸

$$x_0 = \frac{-a}{p}$$

$$x = \frac{p}{-p} = -1$$

معادله در تقاطع
نقطه دوم

$$\frac{-a}{p} = -1 \Rightarrow a = p$$

~~$$1 = -x^2 - 2x + b \Rightarrow b = x^2 + 2x + 1$$~~

$$1 = -x^2 - 2x + b \Rightarrow b = x^2 + 2x + 1$$

$$1 = x^2 + 2x - 2$$

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

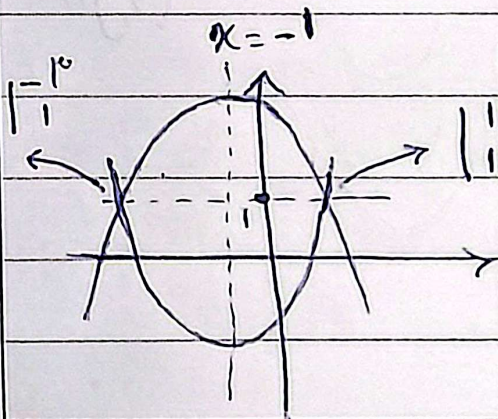
$$\Rightarrow x = \begin{matrix} 1 \\ -3 \end{matrix}$$

~~$$x^2 + 2x - 3 = 0 \Rightarrow x = 1, -3$$~~

~~$$x^2 + 2x - 3 = 0 \Rightarrow x = 1, -3$$~~

~~$$1 = x^2 + 2x - 2 \Rightarrow x^2 + 2x - 3 = 0 \Rightarrow x = 1, -3$$~~

~~$$x = 1, -3$$~~



$$y = x^2 + ax - 2 \Rightarrow a = 2$$

$$y = -x^2 - 2x + b \Rightarrow$$

$$1 = -1 - 2 + b \Rightarrow b = 4$$

$$ab = 2 \times 4 = 8$$

Arman

DATE

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Subject:

(سوال 9)

$$r x^r + a x - y = 0 \rightarrow \alpha, \beta : S = \frac{-a}{r} = \alpha + \beta$$

$$r x^r - a x + b = 0 \rightarrow \alpha + 0/d, \beta + 0/d : S = \alpha + \beta + 1 = \frac{-a}{r} + 1$$

$$S = \frac{+a}{r}$$

$$\Rightarrow \frac{a}{r} = \frac{-a}{r} + 1 \Rightarrow a = 1$$

$$r x^r - x + b = 0 \rightarrow p' = (\alpha + 0/d)(\beta + 0/d) = \alpha\beta +$$

$$0/d(\beta + \alpha) + \frac{1}{r} = p + \frac{S}{r} + \frac{1}{r}$$

$$\Rightarrow p' = -r - \frac{1}{r} + \frac{1}{r} = -r \Rightarrow \frac{b}{r} = -r \Rightarrow b = -r$$

$$r x^r + x - y = 0 \rightarrow \alpha\beta = p = \frac{-y}{r} = -r : S = -0/d$$

$$\left[\frac{a}{r} \right] = \left[\frac{-y}{r} \right] = [-1, d] = [-r]$$

سوال ۱۰

سوال ۱۰

$$x^2 + 4x + m = 0 \quad : \quad S = -4 \quad P = m$$

$$x^2 + 2x - 3m = 0 \quad : \quad S = -2 \quad P = -3m$$

$$\alpha + \beta = -4 \quad \alpha\beta = m$$

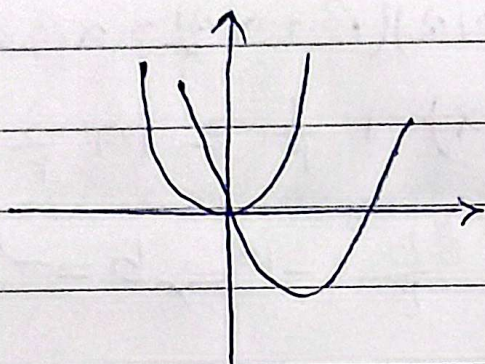
$$\alpha + \theta = -2 \quad \alpha\theta = -3m$$

$$\beta - \theta = -4 + 2 = -2$$

اختلاف ۲، ۲، ۲ غیر مسترک

(۳)

سوال ۷



$$c = 0$$

$$ax^2 + (2+2a)x = 0$$

$$\Rightarrow \Delta = (2+2a)^2 = 0$$

$$\Rightarrow 2+2a = 0 \Rightarrow 2a = -2 \Rightarrow$$

اگر $a = -1$ ، $\Delta = 0$ و در حالت $a > 0$ یا $a < 0$ $\Delta > 0$ زیرا $a > 0$ یا $a < 0$ $\Delta > 0$

$$\Delta > 0 \Rightarrow (2+2a)^2 > 0 \Rightarrow a \neq -1$$

$$(a > 0)$$

$$(a < 0)$$

$$b < 0 \Rightarrow 2+2a < 0 \Rightarrow 2a < -2 \Rightarrow a < -1$$

به ازای هیچ مقدار a

$$\textcircled{1} \cap \textcircled{2} = \emptyset$$