

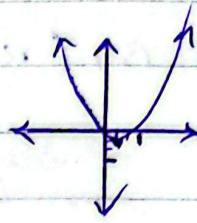
تکلیف: 25

A (معروضه)

فاطمه زهرا طالب عزیزی

الف) $y = 2x^2 - 2x$

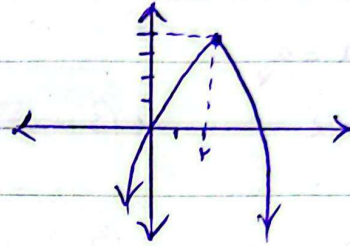
$$\text{ent} \left| \begin{array}{l} \frac{-b}{2a} = \frac{1}{2 \times 2} = \frac{1}{4} \\ \frac{1}{4} - \frac{1}{4} = -\frac{1}{4} \end{array} \right.$$

 $\frac{1}{4}$ $\frac{1}{4}$

(1)

ب) $y = -x^2 + 2x$

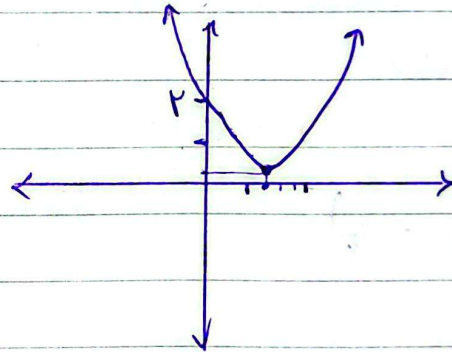
$$\text{ent} \left| \begin{array}{l} \frac{-b}{2a} = \frac{-2}{-2} = 1 \\ -1 + 1 = 0 \end{array} \right.$$

 $\frac{1}{4}$ $\frac{1}{4}$

(2)

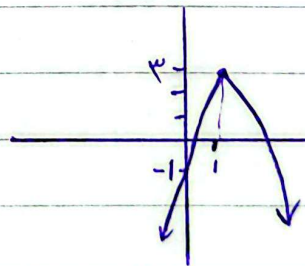
الف) $y = 2x^2 - 5x + 2$

$$\text{ent} \left| \begin{array}{l} \frac{-b}{2a} = \frac{+5}{4} \\ 2 \times \frac{25}{16} - 5 \left(\frac{5}{4} \right) + 2 = \frac{9}{16} \end{array} \right.$$

 $\frac{1}{4}$ $\frac{1}{4}$

ب) $y = -x^2 + 2x - 1$

$$\text{ent} \left| \begin{array}{l} \frac{-b}{2a} = \frac{-2}{-2} = 1 \\ -1 + 1 - 1 = -1 \end{array} \right.$$

 $\frac{1}{4}$ $\frac{1}{4}$

$$x^2 - x - 2 = 0 \rightarrow \alpha\beta = -2 \quad \alpha + \beta = \frac{-b}{a} = 1 \quad \alpha - \beta = \frac{\sqrt{\Delta}}{|a|} = \sqrt{13} \quad (3)$$

$$\text{الف) } \frac{\alpha + \beta}{\alpha - \beta} = \frac{1}{\sqrt{13}} = \frac{\sqrt{13}}{13}$$

$$\text{ب) } \alpha^2 + \beta^2 = (\alpha + \beta)^2 - 2\alpha\beta = 1^2 - 2(-2) = 5$$

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$$ع) \alpha^r + \beta^r = (\alpha + \beta) (\alpha^r - \alpha\beta + \beta^r) = (1) (V + r) = 10$$

$$ح) \alpha^r - \beta^r = (\alpha - \beta) (\alpha^r + \alpha\beta + \beta^r) = (\sqrt{13}) (V - r) = 13\sqrt{13}$$

$$n^r - an + a \xrightarrow{\Delta < 0 \text{ اسی}} \leftarrow n=r \text{ دہریہ } (r)$$

$$\textcircled{1} \Delta < 0 \rightarrow a^r - ra < 0 \rightarrow \frac{0}{+1} - \frac{r}{+} \quad \text{اگر } r = (0, 1, 2)$$

$$\textcircled{2} (n-r)^r \rightarrow a=r$$

$$r n^r - 12n - a = 0 \quad *$$

$$\alpha + \beta = \frac{12}{r} = 1 \quad \alpha\beta = \frac{-a}{r}$$

$$\hookrightarrow \beta = 1 - \alpha$$

$$r\alpha^r + \beta^r - r\alpha = 1 \quad \xrightarrow{\beta = 1 - \alpha} \quad r\alpha^r + (1 - \alpha)^r - r\alpha = 1$$

$$r\alpha^r + 14 + \alpha^r - 11\alpha - r\alpha = 1$$

$$r\alpha^r - 12\alpha + 9 = 0$$

$$\alpha^r - 12\alpha + 9 = 0$$

$$(n-9)(n-1) = 0 \rightarrow \begin{cases} n = \frac{9}{r} = 3 = \beta \\ n = \frac{1}{r} = 1 = \alpha \end{cases}$$

$$r\alpha^r - 12\alpha + 9 = 0$$

$$* . b \Rightarrow \boxed{\alpha = -9}$$

بہترین نتیجہ

$$\frac{a}{\beta} = \frac{-9}{1} = -9$$

(9) هر دو بیگانه \neq a ، a سبب این نقطه می شود

$$y_1, a = \frac{v - 2a + 2a + 2}{2} = a$$

$$\begin{cases} b = a \\ b - v = 2 \end{cases} \rightarrow \begin{cases} y = k(a - h)^2 + y_s \\ y = k(a - a)^2 + 2 \end{cases}$$

$$y = -\frac{1}{k}$$

$$y = -\frac{1}{k}(-a)^2 + 2$$

بقیه $\rightarrow a - 2 = k(v - 2a - a)^2 + 2$

$$a - 2 = k(2 - 2a)^2 + 2$$

$$a - a = 4k(a - 1)^2$$

نقطه $x=0$

$$y = -\frac{1}{k}(a - a)^2 + 2$$

بقیه $\rightarrow a - 2 = k(2a + 2 - a)^2 + 2$

$$a - a = 4k(a - 1)^2 \xrightarrow{* \cdot b} 2 - a = 4k(2)^2$$

$$-2 = 16k \rightarrow k = -\frac{1}{8}$$

if $a = 2^*$ $\rightarrow \begin{matrix} B \\ A \end{matrix} \begin{matrix} | \\ | \\ | \end{matrix}$

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$$d = \sqrt{(a - 0)^2 + (-\frac{1}{k} - 0)^2} = \sqrt{\frac{1}{4k} + \frac{1}{k^2}} = \frac{1}{k}$$

$$\begin{matrix} 0 \\ 0 \\ -\frac{1}{k} \end{matrix}$$

$$a\alpha^2 - a\alpha - b = 0 \quad (\checkmark)$$

$$r_0 \beta^2 + r_0 \alpha^2 - r_0 \beta = 1V$$

* $\cdot \frac{b}{r_0 \alpha^2}$

$$r\beta^2 + \alpha^2 - \beta = \frac{1V}{r_0}$$

$$r(1-\alpha)^2 + \alpha^2 - (1-\alpha) = \frac{1V}{r_0}$$

$$\alpha + \beta = \frac{a}{a} = 1$$

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

$$r(1+\alpha^2 - 2\alpha) + \alpha^2 - 1 + \alpha = \frac{1V}{r_0}$$

$$\downarrow$$

$$\beta = 1 - \alpha$$

$$r + r\alpha^2 - 2r\alpha + \alpha^2 - 1 + \alpha = \frac{1V}{r_0}$$

$$r\alpha^2 - 2r\alpha + 1 = \frac{1V}{r_0}$$

$$|\alpha - \beta| = |\alpha - (1-\alpha)| = \alpha - 1 + \alpha = 2\alpha - 1$$

$$4r\alpha^2 - 4r\alpha + r_0 = 1V$$

$$4r\alpha^2 - 4r\alpha + r_0 = 0$$

$$\rightarrow \left| r \left(\frac{\omega \pm 2\sqrt{\omega}}{10} \right) - 1 \right| = \left| \frac{\omega \pm 2\sqrt{\omega}}{10} - \frac{\omega}{10} \right| = \left| \frac{\pm 2\sqrt{\omega}}{10} \right|$$

$$\rightarrow r_0 \alpha^2 - 2r_0 \alpha + 1 = 0$$

تفاضل $\frac{2\sqrt{\omega}}{10}$

$$\alpha = \frac{r_0 \pm \sqrt{4r_0}}{4r_0}$$

$$\alpha = \frac{\omega \pm 2\sqrt{\omega}}{10}$$

لما $\alpha = 1, \beta = 0$ و $\alpha = 0, \beta = 1$ هما نقطتان از وسط α و β \Rightarrow $\alpha' = \frac{1 + (-1)}{2} = -1$

$$y = a(x - (-1))^2 - \frac{1}{r}$$

$$\Rightarrow y = a(x + 1)^2 - \frac{1}{r}$$

$$y = a(x - h)^2 + k$$

باید $\frac{1}{r} = a$

$$\frac{1}{r} = a = \frac{1}{r} \rightarrow \boxed{a = \frac{1}{r}} \Rightarrow y = \frac{1}{r}(x + 1)^2 - \frac{1}{r}$$

$$\beta = \frac{1}{r}(-1 + 1)^2 - \frac{1}{r} \rightarrow \boxed{\beta = -\frac{1}{r}}$$

$$x^2 + 4x + a = 0 \quad (9)$$

$$\alpha + \beta = -4 \rightarrow \beta = -4 - \alpha$$

$$\alpha \beta = a$$

$$r\alpha^2 + r\beta^2 = 12\sqrt{r} + 11a$$

$$r\alpha^2 + r(-4 - \alpha)^2 = 12\sqrt{r} + 11a$$

$$r\alpha^2 + r(16 + 8\alpha + \alpha^2) = 12\sqrt{r} + 11a \rightarrow \omega\alpha^2 + 8r\alpha + 16r = 12\sqrt{r} + 11a$$

$$\omega\alpha^2 + 8r\alpha - 12\sqrt{r} = 11a \rightarrow \alpha = \frac{-8r \pm \sqrt{64r^2 + 4\omega(11a - 12\sqrt{r})}}{2\omega}$$

$$\beta = -4 - \alpha \rightarrow \alpha\beta = a \rightarrow 9 - 11 = a$$

$$\boxed{a = 11}$$

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$$m^2 r - (m+12)r + 1 = 0 \quad (10)$$

$$\alpha + \beta = \frac{m+12}{m^2}, \quad \alpha \beta = \frac{1}{m^2}$$

$$\sqrt{\frac{1}{\alpha}} + \sqrt{\frac{1}{\beta}} = 2 \Rightarrow \frac{\sqrt{\beta} + \sqrt{\alpha}}{\sqrt{\alpha\beta}} = 2 \rightarrow (\sqrt{\beta} + \sqrt{\alpha})^2 = \left(\frac{2}{m}\right)^2$$

$$\rightarrow \frac{\beta + \alpha + 2\sqrt{\alpha\beta}}{m} = \frac{4}{m^2}$$

$$\frac{m+12}{m^2} + \frac{1}{m} = \frac{4}{m^2} \rightarrow \frac{m+12}{m^2} = \frac{3}{m^2} \rightarrow |m = -1|$$

$$m^2 r + 12r + 1 = 0 \Rightarrow -r^2 + 12r + 1 = 0 \Rightarrow 6r_1 - r_2 = -1$$