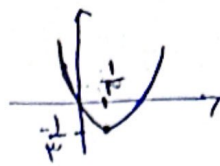


1) اولی $y = 3x^2 - 2x$

عریضه

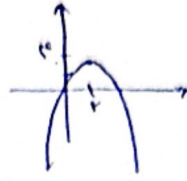
$$\left| \begin{array}{l} -\frac{b}{2a} = \frac{2}{6} = \frac{1}{3} \\ y = \frac{1}{3} - \frac{2}{6} = -\frac{1}{3} \end{array} \right.$$



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ب) $y = -x^2 + 2x$

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



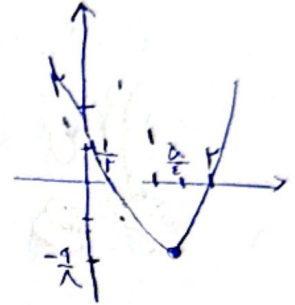
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2) اولی $y = 2x^2 - 5x + 1$

$$\Delta = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a} = \frac{5 \pm \sqrt{25 - 8}}{4} \rightarrow \begin{array}{l} \frac{5}{4} = 1.25 \\ \frac{1}{4} = 0.25 \end{array}$$

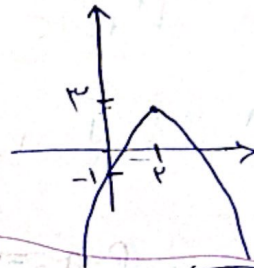
$$x = \frac{-b}{2a} = \frac{5}{4} \quad y = \frac{\Delta}{4a} = \frac{-9}{8}$$

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ب) $y = -x^2 + 2x - 1$

$$\left| \begin{array}{l} x = -\frac{b}{2a} = 1 \\ y = -1 \end{array} \right.$$



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3) اولی $\frac{x+B}{x-B} \rightarrow S = \frac{1}{a} = 1$

$$\frac{\sqrt{S}}{|a|} = \frac{\sqrt{1 - \varepsilon^2}}{1} = \sqrt{1 - \varepsilon^2} \Rightarrow \frac{1}{\sqrt{1 - \varepsilon^2}} \times \frac{\sqrt{1 - \varepsilon^2}}{\sqrt{1 - \varepsilon^2}} = \frac{\sqrt{1 - \varepsilon^2}}{\sqrt{1 - \varepsilon^2}}$$

ب) $x^2 - B^2 = S^2 - P^2 \rightarrow 1 - \varepsilon^2 = \sqrt{1 - \varepsilon^2}$

ج) $x^2 + B^2 = S^2 + P^2 \rightarrow 1 - \varepsilon^2 + (1 - \varepsilon^2) = 1$

د) $x^2 - B^2 = (x-B)^2 + 2x \cdot B(x-B) = (\sqrt{1 - \varepsilon^2})^2 + 2(-\varepsilon)(\sqrt{1 - \varepsilon^2}) \Rightarrow 2\sqrt{1 - \varepsilon^2} - 2\varepsilon\sqrt{1 - \varepsilon^2} = \varepsilon\sqrt{1 - \varepsilon^2}$

4) $y = (a - \varepsilon)x^2 - ax + a \rightarrow a - \varepsilon = 0$ (مساوی)

\downarrow
 $a - \varepsilon = 0$
 $a = \varepsilon$

$\hookrightarrow \Delta < 0 \rightarrow a^2 - \varepsilon a^2 > 0 \rightarrow a(a - \varepsilon) < 0$

$$\frac{\varepsilon}{+1 - 1} < 0$$

$\Rightarrow \varepsilon < a < \varepsilon$

$a = \varepsilon \Rightarrow a^2 - a^2 + a = 0 \rightarrow -a = -\varepsilon \rightarrow a = \varepsilon$

~~$\varepsilon < a < \varepsilon$~~

$4m^2 - 12m + 9 = 0$

$4x^2 + 3x - \varepsilon x = \sqrt{1 - \varepsilon^2}$

$B + ax^2 + ax^2 - \varepsilon x = \sqrt{1 - \varepsilon^2}$

\downarrow
 $\frac{4a}{4} + \frac{3a}{4}$

$a + B^2 = 1 + \frac{3a}{4} \Rightarrow S^2 - P^2 = \dots$

$1 + \frac{3a}{4} + 4x^2 - \varepsilon x = \sqrt{1 - \varepsilon^2}$

$$\frac{-4}{4} = -\frac{3}{4}$$

$\rightarrow \frac{4a}{4} = -4$
 $a = -4$

$$4) A = \left(\frac{1}{\lambda} + \frac{1}{\mu}, \frac{a-1}{\lambda} \right), B = \left(\frac{1}{\lambda} + \frac{1}{\mu}, \frac{a-1}{\mu} \right) \quad y = a(a-1)^{\frac{1}{\lambda} + \frac{1}{\mu}}$$

$$a \cdot \frac{1}{\lambda} + \frac{1}{\mu} = \frac{1}{\lambda} + \frac{1}{\mu} + \frac{1}{\mu} = \frac{1}{\lambda} + \frac{2}{\mu} = \omega$$

$$b = \omega \quad b - \frac{1}{\mu} = \omega$$

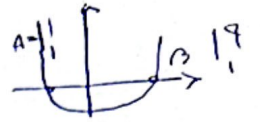
$$\frac{1}{\lambda}$$

$$1 = \frac{1}{\lambda} + \frac{1}{\mu}$$

$$a = -\frac{1}{\lambda}$$

$$y = 0 = -\frac{1}{\lambda} (a-1)^{\frac{1}{\lambda} + \frac{1}{\mu}}$$

$$y(0) = \frac{-1}{\lambda} + \frac{1}{\mu} = -\frac{1}{\lambda} \Rightarrow \frac{1}{\mu} = \frac{1}{\lambda}$$



$$v) \quad a \alpha^r - a \alpha - b = 0$$

$$E \cdot B^r + \frac{1}{\mu} \alpha^r - \frac{1}{\mu} B = 1$$

$$F \cdot (1-\alpha)^r + \frac{1}{\mu} (\alpha^r) - \frac{1}{\mu} (1-\alpha) = 1 \Rightarrow F \cdot \alpha^r - F \cdot \alpha + \frac{1}{\mu} = 0$$

$$|\alpha - B| = \sqrt{F^r - \frac{1}{\mu}} = \frac{1}{\sqrt{\omega}} = \frac{1}{\omega} \sqrt{\omega}$$

$$\frac{1}{\mu} = \frac{1}{\lambda}$$

$$A) \quad (1-\alpha, B) \rightarrow (b, B) \rightarrow \frac{-a \pm \sqrt{a^2 - 4bc}}{2c} \rightarrow a = -1 \quad \frac{1}{\mu} = -\frac{1}{\lambda} \rightarrow \frac{1}{\mu} = \frac{1}{\lambda}$$

$$-\frac{D}{Ea} \Rightarrow \frac{-b^2 + \sqrt{b^2 - 4ac}}{2c} = -\frac{b}{2c} = -\frac{1}{\lambda} \Rightarrow b = 1$$

$$\frac{1}{\lambda} \alpha^r + \frac{1}{\mu} + \frac{1}{\mu} \alpha = 1 \Rightarrow \frac{1}{\lambda} + \frac{1}{\mu} + \frac{1}{\mu} = 1 \Rightarrow \frac{1}{\lambda} = \frac{1}{\mu}$$

$$9) \quad \alpha^r + \frac{1}{\mu} \alpha + a = 0 \Rightarrow \begin{cases} \alpha = -\frac{1}{\mu} + \sqrt{\frac{1}{\mu^2} - a} \\ B = -\frac{1}{\mu} - \sqrt{\frac{1}{\mu^2} - a} \end{cases} \Rightarrow \alpha^r = \left(-\frac{1}{\mu} + \sqrt{\frac{1}{\mu^2} - a} \right)^r$$

$$\mu B^r + \mu B^r = 1 \Rightarrow -\frac{1}{\mu} - \sqrt{\frac{1}{\mu^2} - a} = \frac{1}{\mu} + \sqrt{\frac{1}{\mu^2} - a} \Rightarrow \frac{1}{\mu} = \frac{1}{\mu}$$

$$\frac{1}{\mu} + \sqrt{\frac{1}{\mu^2} - a} = \frac{1}{\mu} + \sqrt{\frac{1}{\mu^2} - a} \Rightarrow a = 1$$

$$1.) \quad \frac{1}{\sqrt{\alpha}} + \frac{1}{\sqrt{\beta}} = \omega \Rightarrow \frac{\sqrt{\alpha} + \sqrt{\beta}}{\sqrt{\alpha\beta}} = \omega$$

$$\alpha \cdot \beta = \frac{1}{\mu^2} \Rightarrow \alpha + \beta = \frac{m+1}{\mu}$$

$$(\sqrt{\alpha} + \sqrt{\beta})^2 = \alpha + \beta + 2\sqrt{\alpha\beta}$$

$$\frac{m+1}{\mu} + \frac{2}{\mu} = \frac{m+3}{\mu}$$

$$\frac{1}{\mu} \sqrt{m+3} = \omega$$

$$m+3 = \omega^2 \Rightarrow m = -3$$

$$\frac{\sqrt{m+3}}{\mu} = \sqrt{\alpha} + \sqrt{\beta}$$

$$\alpha \cdot \beta \rightarrow m \alpha^r + \mu \alpha + \mu = \frac{c}{\alpha} = \frac{1}{m} = -1$$