

$$y = ax^2 + bx + c \quad A(-1, 9) \quad B(3, 1)$$

$$\frac{-b}{2a} = -1 \Rightarrow b = 2a$$

$$\Rightarrow a - b + c = 9 \Rightarrow c - a = 9 \Rightarrow c = a + 9$$

$$\Rightarrow 9a + 2b + c = 1 \Rightarrow 9a + 4a + a = -1 \Rightarrow 14a = -1 \Rightarrow a = -\frac{1}{14} \rightarrow b = -\frac{1}{7} \rightarrow c = \frac{13}{14}$$

$$\boxed{y = -\frac{1}{14}x^2 - \frac{1}{7}x + \frac{13}{14}}$$

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

$$m^2 - 4(m + 4) \geq 0$$

$$m^2 - 4m - 16 \geq 0 \Rightarrow (m - 12)(m + 4) \geq 0$$

$$m \in (-\infty, -4) \cup (12, +\infty)$$

$$-\frac{m}{2} > 0 \Rightarrow m < 0$$

$$\frac{m+4}{2} > 0 \Rightarrow m+4 > 0 \Rightarrow m > -4$$

درستی تست

$\Delta > 0$
 $\Delta > 0$
 $S > 0$
 $P > 0$

$\Rightarrow m \in (-4, -\varepsilon)$

$\boxed{-4 < m < -\varepsilon}$

$$\Delta > 0 \Rightarrow (2m-1)^2 - 12(2-m) > 0 \Rightarrow 4m^2 - 4m + 1 - 24 + 12m > 0$$

$$4m^2 + 8m - 23 > 0 \Rightarrow m > \frac{-2 + \sqrt{4 + 232}}{2} = \frac{-2 + \sqrt{236}}{2} = \frac{-2 + 2\sqrt{59}}{2} = -1 + \sqrt{59}$$

شماره ۲۰

$\frac{-2 + \sqrt{236}}{2}$

$\frac{-2 - \sqrt{236}}{2}$

$\frac{-2 + \sqrt{236}}{2}$

$\frac{-2 - \sqrt{236}}{2}$

$$m > \frac{-2 + \sqrt{236}}{2} \Rightarrow m < \frac{-2 - \sqrt{236}}{2}$$

$$\alpha + \beta = \frac{1}{\alpha\beta} \Rightarrow \frac{1 - 2m}{2} = \frac{2}{2m-1} \Rightarrow 2 - 4m - m + 2m^2 = 2 \Rightarrow 2m^2 - 5m = 0$$

$$(2m - 5)(m) = 0 \Rightarrow m = 0 \text{ or } m = \frac{5}{2}$$

$$x^2 - x - \varepsilon = 0 \Rightarrow S = x_1 + x_2 = +1$$

$$P = x_1 x_2 = -\varepsilon$$

$$S_r = x_1^2 + x_2^2 + \frac{1}{x_1} + \frac{1}{x_2} = S^2 - 2SP + \frac{S}{P} = 1 - 2(-\varepsilon)(1) - \frac{1}{-\varepsilon} = 1 + 2\varepsilon + \frac{1}{\varepsilon}$$

$$P_r = \left(x_1^2 + \frac{1}{x_1}\right)\left(x_2^2 + \frac{1}{x_2}\right) = (x_1 x_2)^2 + x_1^2 + x_2^2 + \frac{1}{x_1 x_2} = -4\varepsilon + 1 + 1 - \frac{1}{\varepsilon} = -4\varepsilon + 2 - \frac{1}{\varepsilon}$$

$$-4\varepsilon - \frac{1}{\varepsilon} = \frac{-4\varepsilon^2 - 1}{\varepsilon}$$

$$x^2 - 2x - 1 = 0 \Rightarrow \boxed{x_1 + x_2 = 2}$$

$$\left(\frac{\sqrt{4\varepsilon+1} + \sqrt{4\varepsilon-1}}{2\sqrt{\varepsilon}}\right)(\sqrt{4\varepsilon-1} - 1) = 2\sqrt{\varepsilon} \Rightarrow \frac{x^2 - 1}{\sqrt{4\varepsilon-1}} = 2\sqrt{\varepsilon}$$

$$x^2 - 2x - 1 = 0 \Rightarrow \boxed{x_1 + x_2 = 2}$$

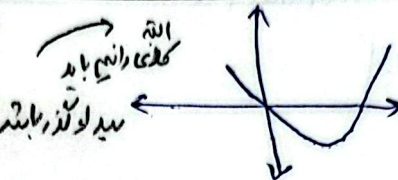
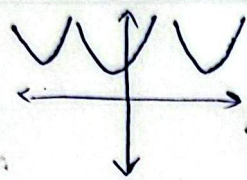
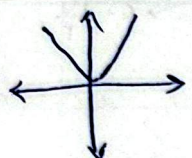
$$3x^2 - ax + \varepsilon = 0$$

$$a + 3a = \frac{\varepsilon}{\mu} \Rightarrow 3a^2 = \frac{\varepsilon}{\mu} \Rightarrow a^2 = \frac{\varepsilon}{3\mu} \Rightarrow a = \pm \sqrt{\frac{\varepsilon}{3\mu}} \Rightarrow a = \pm \frac{1}{\sqrt{3}} \Rightarrow 3a = \pm \sqrt{3} \Rightarrow S = 1 + \frac{1}{\sqrt{3}} = \frac{1}{\sqrt{3}}$$

$$S_1 = \frac{a}{\mu} = \frac{1}{\mu} \Rightarrow a = 1$$

$$S_2 = -\frac{1}{\varepsilon} = a \Rightarrow a = -1$$

نتیجه -14



$$y = ax^2 + (3+2a)x$$

$$3+2a = 0 \Rightarrow a = -\frac{3}{2}$$

$$\Delta < 0 \Rightarrow a > 0 \Rightarrow (3+2a)^2 < 0$$

$$\Delta > 0 \Rightarrow a > 0 \Rightarrow S = -\frac{(3+2a)}{a} > 0 \Rightarrow a \in (-\frac{3}{2}, 0)$$

مجموعه مقادیر

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

$$y = x^2 + 4x - 2 \Rightarrow y = x^2 + 2x - 2$$

$$\frac{y}{x} = \frac{2a}{p} \Rightarrow a = 2$$

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

$$1 = x^2 + 2x - 2 \Rightarrow x^2 + 2x - 3 = 0 \Rightarrow (x+3)(x-1) = 0 \Rightarrow x = -3 \text{ or } x = 1$$

$$-9 + 4 + b = 1 \Rightarrow b = 6$$

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

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

$$\alpha + \frac{1}{\beta} > \beta + \frac{1}{\alpha}$$

$$S = \alpha + \beta + 1 = \frac{1}{\beta} = \frac{a}{3}$$

$$\Rightarrow a = 1$$

$$P = (\alpha + \frac{1}{\beta})(\beta + \frac{1}{\alpha}) =$$

$$\frac{1}{\varepsilon} + \frac{1}{\beta}(\frac{1}{\alpha} + \beta) + \alpha\beta = \alpha\beta = -2 = \frac{b}{3} \Rightarrow b = -6$$

$$3ax^2 + 4ax - 4 = 0$$

$$\alpha, \beta$$

$$S = \alpha + \beta = \frac{-4}{3a} = -\frac{1}{3}$$

$$P = \alpha\beta = \frac{-4}{\frac{4a}{3}} = -3$$

$$a = 1$$

$$b = -4$$

$$\left[\frac{ab}{\varepsilon} \right] = \left[\frac{-4}{\varepsilon} \right] =$$

$$\left[-\frac{4}{\varepsilon} \right] = \boxed{-2}$$

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

$$\alpha, \beta$$

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

$$\alpha = -4 - \beta$$

$$x^2 + 2x - 4 = 0$$

$$\alpha, \gamma$$

$$\alpha + \gamma = -2$$

$$\alpha = -2 - \gamma$$

$$\Rightarrow -2 - \gamma = -4 - \beta$$

$$\Rightarrow \gamma - \beta = 4 - 2 = 2$$