

۱۹

$$x^2 - 5x + 2 = 0 \rightarrow \beta^2 = 5\beta - 2 \rightarrow \beta^5 = 5^4\beta - 2^4 = 19\beta - 16$$

$$\alpha + \beta = 5 \rightarrow \alpha = 5 - \beta$$

$$\alpha\beta = 2$$

جواب ۱۹

$$\frac{\varepsilon(\alpha) + \beta^5}{5\beta^2} = \frac{\varepsilon(5 - \beta) + 19\beta - 16}{5(5\beta - 2)} = \frac{-\varepsilon\beta + 25 + 19\beta - 16}{25\beta - 10} = \frac{13\beta - 9}{25\beta - 10} = 19$$

$$(3, -4), (-1, 5, -4)$$

$$\text{محور تقارن} \Rightarrow \frac{3 - 1}{2} = 1$$

$$\Rightarrow \frac{x_1 + x_2}{2}$$

$$\text{مجموع منتهای تابع} \Rightarrow x_1 + x_2 = 2 \times 1 = 2$$

جواب ۱۵

$$x^2 + 2kx + 5 = 0$$

$$|x_1 - x_2| = \frac{\varepsilon}{k}$$

$$|x_1 - x_2| = \sqrt{(x_1 + x_2)^2 - 4x_1x_2} = \sqrt{4k^2 - 20} = \frac{\varepsilon}{k} \rightarrow 4k^2 - 20 = \frac{\varepsilon^2}{k^2} \rightarrow 4k^4 - 20k^2 - \varepsilon^2 = 0$$

$$\rightarrow 4k^4 - 20k^2 - 100 = 0 \rightarrow k^2 = 9 \rightarrow \left[\frac{k^2}{2} \right] = \left[\frac{9}{2} \right] = [4.5] = 4$$

جواب ۴

$$A_2(3, y)$$

$$B_2(-5, y)$$

$$C_2(x, 1)$$

$$y = \frac{\varepsilon}{3} \left(\frac{3}{0-2} \right) \left(\frac{1}{0-1} \right) \rightarrow y = \frac{1}{3}$$

$$\alpha^2 + \beta^2 = 5 \rightarrow \alpha = 1, \beta = 2 \rightarrow y = n(x-2)(x-1) \rightarrow 1 = n \left(\frac{-3}{2} \right) \left(\frac{-1}{2} \right) \Rightarrow n = \frac{4}{3}$$

$$\rightarrow x^2 - 2px + 5 = 0 \rightarrow \left(\frac{x}{a} \right)^2 - 2 \frac{x}{a} + 5 = 0 \rightarrow 9 - 4 = 5 \checkmark$$

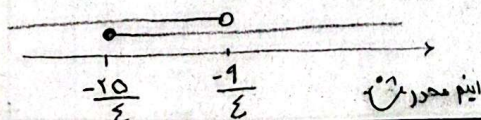
جواب ۱۵

$$-x^2 + 5x + m = 0$$

$$\Delta = 25 + 4m \geq 0 \rightarrow m \geq -\frac{25}{4}$$

$$f\left(\frac{1}{2}\right) < 0$$

$$f\left(\frac{1}{2}\right) = -\left(\frac{1}{2}\right)^2 + 5\left(\frac{1}{2}\right) + m = -\frac{1}{4} + \frac{5}{2} + m = \frac{9}{4} + m \rightarrow \frac{9}{4} + m < 0 \rightarrow m < -\frac{9}{4}$$



$$\Rightarrow -\frac{25}{4} \leq m < -\frac{9}{4}$$

جواب $-\frac{25}{4} \leq m < -\frac{9}{4}$

$$m > 0 \quad \text{دراستی}$$

$$y_{\min} = \frac{\epsilon a c - b^2}{\epsilon a} = 2 \rightarrow \frac{\epsilon(m)(2m-1) - 1\epsilon\epsilon}{\epsilon m} = \frac{20m^2 - \epsilon m - 1\epsilon\epsilon}{\epsilon m} = 2m-1 - \frac{34}{m} = 2$$

$$\text{جواب } x=2$$

$$a=m$$

$$b=-12$$

$$c=2m-1$$

$$\rightarrow 2m - \frac{34}{m} = 2 \rightarrow 2m^2 - 34 = 2m \rightarrow 2m^2 - 2m - 34 = 0$$

$$\rightarrow m = \frac{2 \pm \sqrt{4 + 272}}{4} \Rightarrow m = \frac{2 \pm 16}{4} \Rightarrow m = \frac{18}{4} = \frac{9}{2} \Rightarrow x = \frac{-b}{2a} = \frac{12}{2m} = \frac{4}{m} \Rightarrow x=2$$

$$x^2 + 2(a+1)x + 2a-1 = 0$$

$$\alpha, a, \beta \text{ أعداد صحیح}$$

$$a^2 = \alpha\beta \rightarrow a^2 = 2a-1 \rightarrow a^2 - 2a + 1 \rightarrow a=1$$

$$\text{جواب } a=1$$

$$x^2 - 12x^2 - 2 = 0 \rightarrow t^2 - 12t - 2 = 0 \quad |x^2 = t|$$

$$\text{جواب } -49$$

$$\rightarrow d = \frac{-b}{a} = \frac{-12}{1} = -12$$

$$\rightarrow p = \frac{c}{a} = \frac{-2}{1} = -2$$

$$\rightarrow 2p^2 - 12dp + 2d = 2(12)^2 - 12(-12)(-2) + 2(-2) = 288 - 288 - 4 = -4$$

$$1/8$$

$$y = kx^2 - \epsilon x - 4 \rightarrow x_r = \frac{-b}{2a} = \frac{+4}{2k} = \frac{2}{k} \rightarrow y_r = k\left(\frac{2}{k}\right)^2 - \epsilon\left(\frac{2}{k}\right) - 4 = \frac{4}{k} - \frac{2\epsilon}{k} - 4 = -\frac{\epsilon}{k} - 4$$

$$\Rightarrow \text{نقطه } G = \left(\frac{2}{k}, -\frac{\epsilon}{k} - 4\right)$$

$$\rightarrow -\frac{\epsilon}{k} - 4 = -\frac{\epsilon^2}{k} - \epsilon \rightarrow \frac{\epsilon}{k} = 2 \rightarrow k=2$$

$$\text{جواب } -1$$

$$y = -mx^2 + mx + 1$$

$$y = -m - x$$

$$-mx^2 + mx + 1 = -m - x \rightarrow mx^2 - (m+1)x - (m+1) = 0$$

$$\Delta < 0 \rightarrow (m+1)^2 + 4m(m+1) < 0$$

$$\rightarrow m^2 + 2m + 1 + 4m^2 + 4m < 0 \rightarrow 5m^2 + 6m + 1 < 0 \rightarrow (m+1)(5m+1) < 0 \rightarrow \begin{cases} m = -1 \\ m = -\frac{1}{5} \end{cases}$$

$$\text{جواب } 0$$

$$\text{عدم صحت بینان نیست}$$

$$-1 < m < -\frac{1}{5}$$

$$x_5 = \frac{r-a}{r} = -1 \leadsto -\frac{b}{ra} = -1 \leadsto -\frac{b}{a} = -r = 5$$

طول راس سهمی میانی دو نقطه‌ای هم عرض است (مثل سهمی! بگو کنید ...)

$$مردمی = (y-1) = a(n+1)^2 \leadsto y = an^2 + 2an + a + 1$$

$$a^2 + b^2 = 5^2 - 2p \leadsto (-r)^2 - 2p = 4 \rightarrow p = -\frac{1}{r} \leadsto \frac{a+1}{a} = -\frac{1}{r} \leadsto 2a + 2 = -a \rightarrow a = -\frac{2}{r}$$

$$مخازن = a - 1 \leadsto -\frac{2}{r} + 1 = \frac{1}{r}$$

$$x^2 = t \rightarrow t^2 - vt - 4 = 0 \rightarrow t = \frac{v \pm \sqrt{49}}{2} \xrightarrow{x^2} x = \frac{v + \sqrt{49}}{2}$$

$$x = \pm \sqrt{\frac{v + \sqrt{49}}{2}} \leadsto s = 0, p = -\left(\frac{v + \sqrt{49}}{2}\right)$$

$$\underbrace{2p^2}_{0} - \underbrace{3sp}_{0} + 2s = 2p^2 = 2\left(\frac{v + \sqrt{49}}{2}\right)^2 = \frac{1}{2}(49 + 49 + 14\sqrt{49}) = 49 + 7\sqrt{49}$$