

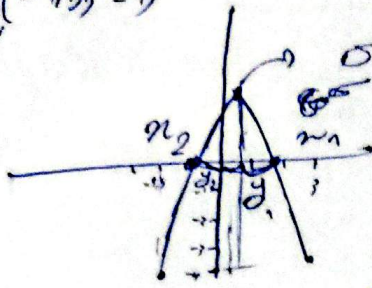
22 $\alpha + \beta = +5, \alpha\beta = 2 \Rightarrow \beta = 2 \Rightarrow \alpha = 3$

$\frac{4\alpha + \beta^2}{5\beta^2} = ? \quad \frac{4}{5} \alpha \frac{\alpha}{\beta^2} + \frac{\beta^2}{5} = \frac{\alpha^3}{5} + \frac{\beta^3}{5} = \frac{5^3 - 3P_5}{5} = \frac{-125 - 3 \times 2 \times 5}{5} = \frac{-25}{5} = -5$

$\Rightarrow \boxed{-5} \rightarrow \boxed{-31}$

$(3, -4), (-1.5, -4)$

نقطه ها



$x_1 - y = x_2 - y$

$\Rightarrow \frac{-1.5 + 3}{2} = \frac{1.5}{2} = \frac{3}{4} \rightarrow$ طول یکی کمی

$\frac{3}{4} \times 2 = \frac{3}{2} \rightarrow$ نصف آن

$x^2 - 2kx + 5 = 0 \rightarrow \Delta = 4k^2 - 20$

$\left[\frac{k^2}{2}\right] = \left[\frac{4k^2 - 20}{4}\right] = \frac{4k^2 - 20}{4} = k^2 - 5 \Rightarrow 16k^2 = 36k^2 - 180 \Rightarrow 20k^2 = 180 \Rightarrow k^2 = 9 \Rightarrow k = 3$

$\left[\frac{k^2}{2}\right] = \left[\frac{9}{2}\right] = 4$

$A = (3, y), B = (-5, y) \quad \alpha^2 + \beta^2 = 5$

$\frac{n\alpha + n\beta}{2} = \frac{-b}{2a} = n_5 \Rightarrow n_5 = \frac{-5 + 3}{2} = -1 \Rightarrow \frac{-b}{2a} = 5 - 2$

$y - 1 = \alpha(x - (-1))^2 \Rightarrow y = \alpha x^2 + 2\alpha x + \alpha + 1 \Rightarrow \alpha^2 + \beta^2 = 5 \Rightarrow 5 - 2P = 5$

$(-2)^2 - 2\left(\frac{\alpha+1}{\alpha}\right) = 5 \Rightarrow \alpha = -\frac{2}{3} \Rightarrow C = \frac{1}{\alpha+1} = \boxed{\frac{1}{3}}$

$x^2 + 5x + m = 0 \Rightarrow x^2 + 5x - m = 0 \quad -m = x_1 x_2 \quad x_1 + x_2 = 5$

$\Rightarrow \frac{5 + \sqrt{25 + 4m}}{2} < \frac{9}{2} \Rightarrow \sqrt{25 + 4m} < 4 \Rightarrow 4m < -9 \Rightarrow m < -\frac{9}{4}$

$4m + 25 > 0 \Rightarrow m > -6.25$

$m \in \{-3, -4, -5, -6\} \Rightarrow m$ مقادیر صحیح

$$y = mx^2 - 12x + 5m - 9 \rightarrow \min = 2$$

$$m > 0 \Rightarrow \frac{2m^2 - 4m - 44}{4m} = 2 \Rightarrow 8m = -20m^2 - 4m + 144 \Rightarrow 5m^2 - 3m - 36 = 0$$

$$\Delta = 729 \Rightarrow m = \frac{3 \pm \sqrt{729}}{10} \Rightarrow m = 3 \quad \frac{b}{2a} = \frac{-12}{5} = -\frac{12}{5} = -2$$

$$a^2 + 2(a+1)x + 2a - 1 = 0 \quad \alpha\beta = a^2 \quad -2(a+1) = \alpha + \beta \quad -7$$

$$\Rightarrow 2a - 1 = \alpha\beta = a^2 \Rightarrow 2a - 1 = a^2 \Rightarrow a^2 - 2a + 1 = 0 \Rightarrow (a-1)^2 = 0 \Rightarrow a = 1$$

$$\Rightarrow x^2 + 2(a+1)x + 2a - 1 = 0 \Rightarrow x^2 + 4x + 1 = 0 \quad \alpha\beta = 1 \quad \alpha + \beta = -4 \Rightarrow a = -2 + \sqrt{3}$$

$$\beta = -2 - \sqrt{3}$$

$$x^4 - 7x^2 - 5 = 0 \quad x^2 = t \Rightarrow t^2 - 7t - 5 = 0 \Rightarrow t = \frac{7 \pm \sqrt{49 + 20}}{2} \Rightarrow x = \pm \sqrt{\frac{7 \pm \sqrt{69}}{2}} \quad -8$$

$$2p^2 - 35p + 25 = 0 \Rightarrow 5 = 0 \Rightarrow p = \frac{-7 \pm \sqrt{49}}{2} \Rightarrow 2p^2 - 35p + 25 = 0$$

$$\Rightarrow 49 + 69 - 10\sqrt{69} = 118 - 10\sqrt{69}$$

$$y = kx^2 - 4x - 6 \quad y = -4x - 4$$

$$\frac{-b}{2a} \Rightarrow k = a, b = -4 \Rightarrow \frac{-4}{2k} = \frac{2}{k} \Rightarrow k \left(\frac{2}{k}\right)^2 - 4\left(\frac{2}{k}\right) - 6 = 0 \Rightarrow \frac{4}{k} - 6 = 0 \Rightarrow -4\left(\frac{2}{k}\right) - 6 = 0 \Rightarrow \frac{-4}{k} - 6 = 0 \Rightarrow \frac{-4}{k} = 6 \Rightarrow k = -\frac{4}{6} = -\frac{2}{3}$$

$$\Rightarrow \frac{-8}{k} - 4 = 0 \Rightarrow \frac{4}{k} = 2 \Rightarrow k = 2$$

$$\frac{4}{k} - 6 = -8 \Rightarrow \frac{4}{k} = -2 \Rightarrow k = -2$$

$$y = -mx^2 + mx + 1 \parallel y = -m - x$$

$$-mx^2 + mx + 1 = -m - x \Rightarrow -mx^2 + mx + x + m + 1 = 0 \Rightarrow \Delta < 0$$

$$\Rightarrow m^2 + 2m + 1 + 4m^2 + 4m \Rightarrow 5m^2 + 6m + 1 < 0 \Rightarrow m^2 + 6m + 5 < 0$$

$$\Rightarrow (m+5)(m+1) < 0 \Rightarrow \frac{-5}{5} = -1, \frac{-1}{5}$$

$$\frac{-1}{5} \quad \frac{-1}{5}$$

$$\left(\frac{-1}{5}, -1 \right)$$