

$$\frac{-b}{2a} = 2 \rightarrow \frac{-1}{2(a-1)} = 2 \rightarrow 2a - 4 = -1 \rightarrow 2a = 3 \rightarrow \boxed{a = \frac{3}{2}}$$

$$\rightarrow y = -\frac{1}{2}x^2 + x + 3 \Delta \rightarrow \frac{-1 \pm \sqrt{1+3}}{-\frac{1}{2}} = (-1 \pm 2) \times 2 \begin{matrix} 6 \rightarrow \text{پاسخ} \\ -2 \end{matrix}$$

$$\rightarrow 1) m < 0$$

$$\rightarrow 2) \Delta > 0 \rightarrow 2d - 4m^2 > 0 \rightarrow 4m^2 < 2d \rightarrow m^2 < \frac{2d}{4} \rightarrow -\frac{d}{2} < m < \frac{d}{2} \rightarrow -\frac{d}{2} < m < 0$$

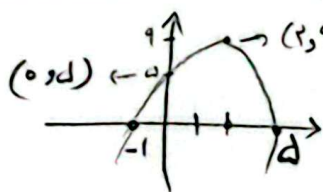
$$S = \frac{3 - \sqrt{5} + 3 + \sqrt{5}}{2} = 3$$

$$P = \left(\frac{3 - \sqrt{5}}{2}\right)\left(\frac{3 + \sqrt{5}}{2}\right) = \frac{9 - 5}{4} = \frac{4}{4} = 1 \rightarrow y = x^2 - 2x + \frac{4}{9} \rightarrow 9y = 9x^2 - 18x + 4$$

$$2x^2 - 18x + m + 4 = 0 \quad \alpha \beta = \frac{m+4}{2} \rightarrow \frac{m}{2} \left(4 - \frac{m}{2}\right) = \frac{m+4}{2} \Rightarrow m - \frac{m^2}{4} = \frac{m+4}{2} \xrightarrow{\times 4} 4m - m^2 = 2m + 8 \Rightarrow m^2 - 2m - 8 = 0 \Rightarrow m = 4 \rightarrow \alpha = \frac{m}{2} = 2$$

$$\rightarrow 18\alpha - m - 4 + (\alpha + \beta)^2 - 2\alpha\beta = 12 \rightarrow 18\alpha - m - 4 + 4 - 2\left(\frac{m+4}{2}\right) = 12 \xrightarrow{\text{ساده شود}} 4\alpha = m \rightarrow \alpha = \frac{m}{4}$$

$$\rightarrow \alpha + \beta = 4 \rightarrow \frac{m}{4} + \beta = 4 \rightarrow \beta = 4 - \frac{m}{4}$$



$$\rightarrow y = a(x-2)^2 + 9 \quad d = 4a + 9 \rightarrow 4a = -4 \rightarrow \boxed{a = -1}$$

$$\rightarrow y = -(x^2 - 4x + 4) + 9 = -x^2 + 4x + 5$$

$$\begin{matrix} \downarrow \\ -1 \\ d \end{matrix} \xrightarrow{\text{در بازه ۵}} (-1, 5)$$

تالیناس
a+c=b

$$\begin{aligned}
 &\alpha^3 - V\alpha + 9\beta = 0 \\
 &\alpha\beta^2 - V\beta + 9\beta = 0 \rightarrow \alpha\beta^2 + 2\beta = 0 \rightarrow \beta(\alpha\beta + 2) = 0 \\
 &\alpha\beta^2 + 2\beta = 0 \rightarrow \beta(\alpha\beta + 2) = 0 \rightarrow \alpha\beta = -2 \rightarrow \beta = -\frac{2}{\alpha} \\
 &\alpha^3 - V\alpha + 9\left(-\frac{2}{\alpha}\right) = \alpha^3 - V\alpha - \frac{18}{\alpha} = 0 \rightarrow \alpha^4 - V\alpha^2 - 18 = 0 \\
 &\alpha^4 - V\alpha^2 - 18 = 0 \rightarrow \alpha^2 = t \rightarrow t^2 - Vt - 18 = 0 \\
 &t^2 - Vt - 18 = 0 \rightarrow (t-9)(t+2) = 0 \rightarrow t = 9 \rightarrow \alpha^2 = 9 \rightarrow \alpha = \pm 3 \\
 &\alpha = 3 \rightarrow \beta = -\frac{2}{3} \rightarrow \alpha < 0 < \beta > 0 \\
 &\alpha = -3 \rightarrow \beta = \frac{2}{3} \rightarrow \alpha < 0 < \beta > 0
 \end{aligned}$$

$$\begin{aligned}
 &x^2 + mx - 2m = 0 \quad \text{ریشه } \alpha, \beta \\
 &\alpha^2 - m\beta = 1 \rightarrow \alpha^2 = m\beta + 1 \\
 &m(\alpha + \beta) + 1 - 2m = 0 \Rightarrow \begin{cases} \alpha + \beta = \frac{2m-1}{m} \\ \alpha + \beta = -\frac{b}{a} = -m \end{cases} \\
 &\alpha + \beta = -m \rightarrow \alpha + \beta = -m \\
 &m < -\frac{1}{2} \rightarrow (m-1)(m+2) = 0 \rightarrow m = 1 \text{ یا } m = -2
 \end{aligned}$$

$$\begin{aligned}
 &\frac{-\Delta}{fa} = 1 \rightarrow \frac{14 - (f)(m)(\frac{m}{f} + V)}{fm} = 1 \rightarrow 14 - 2m^2 - 18m = -32m \\
 &\rightarrow 2m^2 - fm - 14 = 0 \rightarrow m^2 - \frac{f}{2}m - 7 = 0 \rightarrow (m-4)(m+2) = 0 \rightarrow m = 4 \text{ یا } m = -2 \\
 &\text{چون سی با کسیم دار است.}
 \end{aligned}$$

$$\begin{aligned}
 &y = a(x-2)^2 + 4 \quad A(0,4) \rightarrow f = fa + 4 \rightarrow fa = -2 \rightarrow a = -\frac{1}{f} \\
 &\rightarrow y = -\frac{1}{f}(x-2)^2 + 4 \rightarrow -\frac{1}{f}(x-2)^2 + 4 = 0 \rightarrow (x-2)^2 = 4 \rightarrow x^2 - 4x + 4 = 4 \\
 &x^2 - 4x = 0 \rightarrow x(x-4) = 0 \rightarrow x = 0 \text{ یا } x = 4 \\
 &\rightarrow \frac{1}{x_1} + \frac{1}{x_2} = \frac{x_1 + x_2}{x_1 x_2} = \frac{f}{-1} = \boxed{-\frac{1}{f}} \\
 &\text{S=f, P=-1}
 \end{aligned}$$

$$\begin{aligned}
 &\text{جایگزینی} \rightarrow f - 2(fa + f) + (3a^2 + 4a + 2) = 0 \rightarrow f - 1a - 1 + 3a^2 + 4a + 2 = 0 \\
 &\rightarrow 3a^2 - 2a - 1 = 0 \rightarrow (3a+1)(a-1) = 0 \rightarrow a = 1 \text{ یا } a = -\frac{1}{3} \\
 &a = 1 \rightarrow f = fa + 4 \rightarrow f = f + 4 \rightarrow 0 = 4 \text{ (غیرممکن)} \\
 &a = -\frac{1}{3} \rightarrow f = fa + 4 \rightarrow f = -\frac{f}{3} + 4 \rightarrow \frac{4f}{3} = 4 \rightarrow f = 3
 \end{aligned}$$