

Y0

A(x)/a, b, c

$$y = ax^2 + bx + c$$

$$\rightarrow y = a(x-h)^2 + k \quad a(x+1)^2 + 9 = y$$

$$\rightarrow \text{center: } (-1, 9)$$

$$1 = a(x+1)^2 + 9 \Rightarrow 14a + 9 = 2 \Rightarrow a = -\frac{1}{7}$$

$$y = -\frac{1}{7}(x+1)^2 + 9 \Rightarrow y = \boxed{-\frac{1}{7}x^2 - x + \frac{16}{7}}$$

$$x^2 + mx + n = 0 \Rightarrow \Delta > 0$$

-1	1
-	+

$$(1) \frac{-b}{a} > 0$$

$$(2) \frac{c}{a} > 0$$

signs

signs

signs

$$(1)(2)(3) \Rightarrow (-4, -1)$$

$$(1) b^2 - 4ac > 0 \Rightarrow m^2 - 4m - 5 > 0 \rightarrow (-\infty, -1) \cup (5, \infty)$$

$$(2) \frac{-m}{1} > 0 \Rightarrow m < 0$$

$$(3) \frac{c}{a} > 0 \Rightarrow \frac{m+4}{1} > 0 \Rightarrow m > -4$$

$$x^2 + (x-1)x + 1 - m = 0 \Rightarrow \Delta > 0 \Rightarrow m = \frac{5}{4}, -1$$

$$(1) \Delta > 0 \Rightarrow (1) \frac{-b}{a} > \frac{c}{a} \Rightarrow a^2 - bc$$

$$m > \frac{5}{4} \Rightarrow \Delta > 0 \checkmark$$

$$b^2 - 4ac > 0 \Rightarrow (m+1)^2 - 4(1-m) > 0 \Rightarrow m > -1 \Rightarrow \Delta > 0 \checkmark$$

$$(1) a^2 - bc > 0 \Rightarrow x^2 - dm + 1$$

$$x^2 - dm - 1 > 0 \Rightarrow (m-1)(m+1) > 0$$

$$m > \frac{5}{4}, m > -\frac{1}{4} \Rightarrow -1$$

Date:

Sub:

$$x^2 - x - x_0 = 0 \Rightarrow S = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}, P = \frac{c}{a} = -x$$

(5) -x

$$x_0 S = x_1^2 + x_2^2 + \frac{x_1 + x_2}{x_1 x_2} = S^2 - P S P + \frac{S}{P} = \frac{a}{x}$$

$$P^2 (x_1^2 + \frac{1}{x_1}) (x_2^2 + \frac{1}{x_2}) = (x_1 x_2)^2 + x_1^2 + x_2^2 + \frac{1}{x_1 x_2} =$$

$$P^2 + S^2 - 2P + \frac{1}{P} = -\frac{P}{x} \Rightarrow x^2 S + P \left[x^2 - \frac{2b}{x} - \frac{P}{x} \right]$$

$$x^2 - 2bx - P = 0$$

$$(\sqrt{x} - 1) \left(\sqrt{x} + \frac{1}{\sqrt{x}} + 1 \right) = \sqrt{x} \Rightarrow S: 1 + \sqrt{x} + 1 - \sqrt{x} = 2 \quad (5) - a$$

$$\sqrt{x} = t$$

$$\hookrightarrow (t^2 - 1) \left(t^2 + \frac{1}{t^2} + 1 \right) = 2t \Rightarrow t^4 - \frac{1}{t^2} = 2t \Rightarrow t^6 - 1 - 2t^3 = 0$$

$$t^3 = m \Rightarrow m^2 - 2m - 1 = 0 \quad \Gamma m_1, m_2 = 1 \pm \sqrt{2} \Rightarrow t_1^3 = 1 + \sqrt{2}, t_2^3 = 1 - \sqrt{2}$$

$$\Delta = 4 - 4(-1) = 8$$

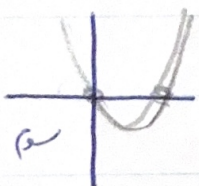
$$\sqrt[3]{x} = t \Rightarrow t^3 = x \Rightarrow x_1, x_2 = 1 + \sqrt{2}, 1 - \sqrt{2}$$

$$x^2 - ax + c = 0, x_1 = \sqrt{x_2} \Rightarrow P = x_1 \times \sqrt{x_2} = \sqrt{x_1 x_2} = \frac{c}{a} \quad (5) - y$$

$$(\sqrt{x_1})^2 = \frac{c}{a} \Rightarrow x_1 = \pm \frac{c}{a}, S = x_1 + \sqrt{x_2} = \frac{-b}{a} = \frac{a}{\sqrt{c}} \Rightarrow \sqrt{x_1} = \frac{a}{\sqrt{c}}$$

$$x_1 = \frac{a^2}{c}, x_2 = \frac{c}{a} \Rightarrow a^2 = \frac{c}{a} \Rightarrow |a| = \frac{a}{\sqrt{c}} \quad (14)$$

$$\text{مقادیر مثبت و منفی} \Rightarrow \text{مقادیر مثبت و منفی} \Rightarrow \text{مقادیر مثبت و منفی} \quad (5) - v$$



$$\textcircled{1} \frac{-b}{a} > 0 \Rightarrow \frac{-3-2a}{a} > 0 \Rightarrow \frac{-3}{-1} > 0 \Rightarrow (-\frac{3}{1} > 0)$$

$$\textcircled{2} \Delta > 0 \Rightarrow (3+2a)^2 > 0 \Rightarrow$$

مقادیر مثبت و منفی

Date:

Sub:

$$\frac{-b}{r_a} - \frac{-b}{r_m} = -1$$

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

$$y = x^2 + r_m x - r$$

$$\frac{r}{-r} = \frac{-a}{r} \Rightarrow a = r$$

مشتق جفت می‌گیریم

نقطه برخورد را می‌یابیم

$$\begin{cases} x+h \Rightarrow -1+h \\ x-h \Rightarrow -1-h \end{cases}$$

$$y_1 = (-1+h)^2 + r(-1+h) - r \Rightarrow h^2 - r = 1 \Rightarrow h = \pm \sqrt{1+r}$$

$$y_2 = 1 - 1 - r + b = -r + b \Rightarrow ab = r \times r = r^2$$

$$x^2 - ax + b = 0 \Rightarrow \alpha_1, \beta_1 \Rightarrow \alpha_1 + \alpha_1 + \beta_1 = 1 + \alpha_1 + \beta_1$$

$$r \alpha x^2 + \alpha x - b = 0 \Rightarrow 1 + (-\frac{1}{r}) = \frac{\alpha}{r} \Rightarrow \alpha = 1$$

$$\frac{(\alpha_1 + \alpha_1)(\beta_1 + \alpha_1)}{\alpha_1 \beta_1} = \frac{b}{r} = \frac{\alpha_1 \beta_1}{-r} + \alpha_1 + \alpha_1 + \alpha_1(\alpha_1 + \beta_1) =$$

$$\frac{b}{r} = -r \Rightarrow b = -4 \rightarrow ab = -4 \quad \left[\frac{-4}{r} = -r \right]$$

$$x^2 + 4x + m = 0, x^2 + rx - rm = 0 \quad \alpha_2 \text{ مشترک}$$

$$\alpha^2 + 4\alpha + m = 0 \quad \alpha^2 + r\alpha - rm = 0$$

$$r\alpha - 4\alpha - rm = 0 \Rightarrow m = -\alpha \Rightarrow \alpha^2 + 4\alpha - \alpha = 0 \Rightarrow \alpha(\alpha + 3) = 0 \Rightarrow \alpha = -3$$

$$m = \alpha \Rightarrow x^2 + 4x + \alpha = 0, x^2 + rx - 1 = 0$$

$$(m+1)(x+\alpha) \quad (x+\alpha)(x-r)$$

$$\begin{cases} x = -1 \\ x = \alpha \end{cases}$$

$$\begin{cases} x = -\alpha \\ x = r \end{cases} \Rightarrow r - (-1) = r$$