

الف با خواص اعداد صحیح

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

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

$$-b = 2a \rightarrow b = -2a$$

$$1 = 9a + 3b + c$$

$$9 = 14a + c$$

$$1 = 9a + 3b + c$$

$$\rightarrow -1 = 14a \rightarrow a = -\frac{1}{14}$$

$$\rightarrow b = -1$$

$$-a + c = 9$$

مکان داری

$$-\frac{1}{14}x^2 - x + \frac{17}{14}$$

$$c = 9 - \frac{1}{14} \text{ و } c = \frac{17}{14}$$

$$\Delta > 0 \text{ و } p > 0 \text{ و } s > 0 \Rightarrow \frac{-b}{a} > 0 \rightarrow \frac{-m}{p} > 0 \rightarrow +m < 0$$

$$\frac{c}{a} > 0 \rightarrow \frac{m+f}{p} > 0 \rightarrow m > -f \text{ و } b^2 - 4ac \Rightarrow m^2 - 4(p)(m+f) = m^2 - 4m - 4f > 0$$

$$(m-1)(m+4) > 0 \rightarrow \begin{array}{c} -f \\ + \end{array} \begin{array}{c} +f \\ - \end{array} \rightarrow m > 1 \text{ و } m < -4 \xrightarrow{\text{اشتراک شرط ها}} -4 < m < -1 \text{ (بخصوص تبارزه)}$$

$$\alpha + \beta = \frac{1}{\alpha\beta} \rightarrow a + \beta = \frac{-b}{a} = \frac{+1-2m}{p} \text{ و } \alpha\beta = \frac{c}{a} \rightarrow \frac{p-m}{p}$$

$$\frac{1-2m}{p} = \frac{p}{p-m} \rightarrow (p-m)(1-2m) = p \rightarrow pm^2 - 3m + 2 = p \rightarrow pm^2 - 3m - p = 0$$

$$\rightarrow c + a = b \rightarrow \begin{array}{l} \alpha_1 = -1 \\ \alpha_2 = \frac{-c}{a} = \frac{+p}{p} \end{array} \xrightarrow{\Delta > 0} \begin{array}{l} -1 = 9 - 14p = -14 \times \frac{1}{14} \\ \frac{p}{p} = \frac{17}{14} - 2 = \frac{1}{14} \end{array} \checkmark$$

$$\alpha^2 - \alpha - f = 0 \rightarrow s = 1 \text{ و } p = -f$$

$$\alpha + \beta = (\alpha_1 + \alpha_2)^p - p\alpha_1\alpha_2 \times (\alpha_1 + \alpha_2) + \frac{\alpha_1 + \alpha_2}{\alpha_1\alpha_2} = (1)^p - 3(-f) \times 1 + (-\frac{1}{f}) = \frac{51}{f}$$

$$\alpha \times \beta = (\alpha_1 \times \alpha_2)^p + (\alpha_1 + \alpha_2)^p - 2\alpha_1\alpha_2 + \frac{1}{\alpha_1\alpha_2} = (-f)^p + (1)^p + 1 - \frac{1}{f} \rightarrow -f + 1 + 1 - \frac{1}{f} = -\frac{2f+1}{f} \rightarrow \alpha^2 - \frac{51}{f}\alpha - \frac{2f+1}{f} = 0 \rightarrow f\alpha^2 - 51\alpha - 2f - 1 = 0$$

$$\left(\sqrt[p]{\alpha f} + 1 + \sqrt[p]{\alpha f} \right) \times \left(\sqrt[p]{\alpha f} - 1 \right) = 2\sqrt[p]{\alpha f} \rightarrow a = \alpha f \xrightarrow{\Delta > 0} (a-1)(a^2+1) = a^3-1$$

$$\xrightarrow{\sqrt[p]{\alpha f} \rightarrow (\alpha f)^{\frac{1}{p}} - 1 = \alpha^{\frac{1}{p}} - 1} \rightarrow \frac{\alpha^{\frac{1}{p}} - 1}{\alpha^{\frac{1}{p}}} = 2\alpha^{\frac{1}{p}} \xrightarrow{\text{ضرب در } \alpha^{\frac{1}{p}}} \alpha^{\frac{1}{p}} - 1 = 2\alpha$$

$$= \alpha^{\frac{1}{p}} - 1 = 2\alpha \rightarrow \alpha^{\frac{1}{p}} - 2\alpha - 1 = 0 \rightarrow \alpha_1 + \alpha_2 = \frac{-b}{a}$$

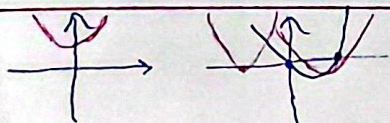
$$\rightarrow -(-2) = \boxed{+2}$$

$$\alpha + 3\alpha = \frac{a}{p} \rightarrow \alpha = \frac{a}{14} \rightarrow 3 \times \left(\frac{a}{14} \right)^2 - a \left(\frac{a}{14} \right) + f = 0$$

$$3 \frac{a^2}{196} - \frac{a^2}{14} + f = 0 \rightarrow \frac{-9a^2}{196} = -f \rightarrow a^2 = 4f \rightarrow a = \pm 1$$

$$1 - (-1) = 2$$

۷- آخر سعی رو به پایین تا شرف نقطه از ۳ نفی کرد.



$$a > 0$$

$$\alpha = 0$$

$$s > 0$$

$$\rightarrow \frac{-b}{p} > 0 \rightarrow \frac{-3+2a}{4} > 0$$

$$\frac{m+14}{a} < 0$$

$$\rightarrow \begin{array}{c} a \\ + \end{array} \begin{array}{c} -f \\ - \end{array} \begin{array}{c} 0 \\ + \end{array}$$

نتیجه مقدراری اشتراک $a < 0$ و $a > 0$ صحیح با خواص اعداد صحیح

$$y = ax^2 + bx + c \rightarrow x = \frac{-b}{2a}$$

$$\frac{-a}{2} = x \text{ جواب } \frac{y}{x} = \frac{1}{-1} = -1 \Rightarrow \frac{-a}{2} = -1 \rightarrow \boxed{a=2}$$

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

$$2) -x^2 - 2x + b = 1 \xrightarrow{x=1} -1 - 2 + b = 1 \rightarrow \boxed{b=4}$$

$\begin{matrix} b & x & a \\ \uparrow & \uparrow & \\ 4 & 1 & 1 \end{matrix}$

$$S = \frac{-b}{2a} = \frac{a}{2} = 1 + \left(\frac{-a}{2a}\right)^{-\frac{1}{2}} \rightarrow \boxed{a=2-1=1}$$

$$2x^2 + x - 4 = 0 \rightarrow b^2 - 4ac = 1^2 - 4(-8) = 1 + 32 = 33 \rightarrow \frac{-1 \pm \sqrt{33}}{4} = \frac{-1 \pm \sqrt{33}}{4}$$

$$\frac{-1 - \sqrt{33}}{4} = \frac{-1 - \sqrt{33}}{4}$$

→ ریشه‌های
اولی و دوم $\rightarrow \frac{-3}{2} = \alpha$ و $2 = \beta \rightarrow \alpha\beta = 2 \times \frac{-3}{2} = -3 = \frac{b}{a} \rightarrow \boxed{b=-6}$

$$\left[\frac{-6}{2}\right] = \left[\frac{-3}{1}\right] = \boxed{-3}$$

$$x^2 + 4x + m = 0 \begin{cases} \alpha \\ \beta \end{cases} \quad S = -4 \rightarrow \alpha + \beta$$

$$x^2 + 2x - 3m = 0 \begin{cases} \alpha' \\ \beta' \end{cases} \quad S = -2 = \alpha + \beta'$$

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

$$\alpha + \beta' = -2 \rightarrow \beta' - \beta = -2 - (-4) = 2$$

اختلاف
ریشه‌های غیر مشترک