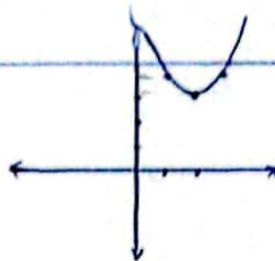


ب) الف

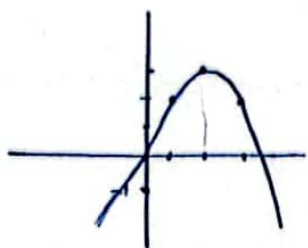
$$y = x^2 - 2x + 7 \quad \left| \begin{array}{l} x = -\frac{b}{2a} = \frac{2}{2} = 1 \\ y = 6 \end{array} \right.$$



نشان دهنده

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

$$\left| \begin{array}{l} x = -\frac{b}{2a} = 1 \\ y = 1 \end{array} \right.$$



x	1	2	3
y	2	3	2

$$2x^2 + (m+1)x + \frac{1}{r}m + 2 = 0 \quad \Delta > 0$$

الف) ریشه ها

$$\Delta > 0 \Rightarrow (m+1)^2 - 4 \cdot \frac{1}{r}m + 2 > 0 \Rightarrow m^2 - 2m - 1 > 0 \Rightarrow (m-5)(m+3) > 0 \Rightarrow \begin{cases} m > 5 \\ m < -3 \end{cases}$$

$$\Delta = 0 \Rightarrow m^2 - 2m - 1 = 0 \Rightarrow (m-5)(m+3) = 0 \Rightarrow \begin{cases} m = 5 \\ m = -3 \end{cases}$$

ب) یک ریشه

$$\Delta < 0 \Rightarrow m^2 - 2m - 1 < 0 \Rightarrow (m-5)(m+3) < 0 \Rightarrow -3 < m < 5$$

ج) ریشه ها حقیقی و متمایز

$$\Delta \geq 0 \Rightarrow m^2 - 2m - 1 \geq 0 \Rightarrow (m-5)(m+3) \geq 0 \Rightarrow \begin{cases} m \leq -3 \\ m \geq 5 \end{cases}$$

د) معادله دارای ریشه

$$y = (m-2)x^2 - 2(m+1)x + 1$$

الف) معادله دارای ریشه ها متمایز

$$\Delta > 0 \Rightarrow b^2 - 4ac = (-2(m+1))^2 - 4(m-2)(1) = 4m^2 + 4m + 4 - 4m + 8 = 4m^2 + 8 > 0$$

$$4m^2 + 8 > 0 \xrightarrow{\div 4} m^2 + 2 > 0 \Rightarrow (m) (m) = 0$$

$$\frac{c}{a} > 0 \Rightarrow \frac{1}{m-2} > 0 \Rightarrow (2, +\infty)$$

$$\frac{-b}{a} < 0 \Rightarrow \frac{2m+2}{m-2} < 0 \Rightarrow \frac{2(m+1)}{m-2} < 0 \Rightarrow \begin{array}{c|c|c} 2 & -1 & 2 \\ y & + & - & + \end{array}$$

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

$$\rightarrow (I) \frac{c}{a} < 0 \Rightarrow \frac{1}{m-1} < 0 \Rightarrow m-1 < 0 \Rightarrow m < 1$$

$$(II) : -\frac{b}{a} < 0 \Rightarrow \frac{r(m+1)}{m-1} < 0 \Rightarrow (-1, 1) \quad \swarrow \quad \boxed{I \cap II = (-1, 1)}$$

$$y = (m-1)x^2 - r(m+1)x + 1.$$

الف) محور از محورهای مختصات

$$b \sim \frac{c}{a} < 0 \Rightarrow \frac{1}{m-1} < 0 \Rightarrow (1, +\infty)$$

$$\Delta = 0 \Rightarrow -r = \frac{b}{ra} = \frac{1}{r} \Rightarrow b = \pm a \Rightarrow -r(m-1) = \pm(m-1) \quad (\cdot)$$

$$4m = 4 \quad m = 1$$

$$\frac{rx^2}{r} - (r \sin \alpha)x + \frac{r}{r} = 0 \quad \Delta \geq 0$$

$$\Delta = b^2 - 4ac \Rightarrow (-r \sin \alpha)^2 - 4\left(\frac{r}{r}\right)\left(\frac{c}{r}\right) \Rightarrow 4 \sin^2 \alpha - 4 \geq 0$$

$$4 \sin^2 \alpha \geq 4 \Rightarrow \sin^2 \alpha \geq 1 \Rightarrow -1 \leq \sin \alpha \leq 1 \Rightarrow \begin{cases} \sin \alpha = -1 \\ \sin \alpha = 1 \end{cases}$$

$$\Delta = 0 \Rightarrow 4 \sin^2 \alpha - 4 = 0 \Rightarrow \Delta = 0 \Rightarrow \frac{-b}{ra} = \frac{r \sin \alpha}{\frac{c}{r}} \Rightarrow \frac{r \sin \alpha}{r} = \frac{r}{r}$$

$$x = \frac{4 \sin \alpha}{r} = \frac{r}{r} \sin \alpha \Rightarrow x = \frac{r}{r} \sin \alpha \Rightarrow \sin \alpha = 1$$

$$x = \frac{r}{r} (1) = \frac{r}{r}$$

$$y = \frac{(cx^2 - rx - 1)(rx^2 - rx - d)}{1 - x^2} \sim \max? \rightarrow x_1 = -1, x_2 = \frac{c}{a} = \frac{d}{r}$$

$$\Rightarrow x_1 = 1, x_2 = \frac{c}{a} = -\frac{1}{r}$$

$$\frac{(x-1)(cx+1)(rx-d)(x+1)}{(1-x)(1+x)} \Rightarrow \frac{-(1-x)(cx+1)(rx-d)}{(1-x)}$$

$$\Rightarrow y = \frac{-(cx+1)(rx-d)}{(1-x)} \Rightarrow y = -4x^2 + 12x + d$$

$$y = -4x^2 + 12x + d \Rightarrow \max = -\frac{b}{ra} = \frac{12}{-4} = -3$$

$$y = -4\left(\frac{12}{-4}\right) + 12\left(\frac{12}{-4}\right) + d \Rightarrow \frac{-144 + 144 + 12}{-4} = \frac{12}{-4} = -3$$

$$mx^2 - (m+2)x - 2 = 0 \quad ? \quad \Delta = \frac{b^2}{4} = \frac{m^2}{4}$$

$$x_1 + x_2 = \frac{c}{a} = \frac{-2}{m} \quad \text{و } x_1 x_2 = \frac{c}{a} = \frac{-2}{m} \Rightarrow \frac{2m+4}{m} = \frac{-1}{m} + 1$$

$$\frac{2m+4}{m} + \frac{1}{m} = 1 \Rightarrow \frac{2m+5}{m} = 1 \Rightarrow 2m+5 = m \Rightarrow m = -5 \Rightarrow \boxed{m = -5}$$

$$\rightarrow 2x^2 - 4x - 2 = 0 \quad \Delta = 16 + 16 = 32 \Rightarrow \sqrt{\Delta} = 4\sqrt{2} \Rightarrow x = \frac{4 \pm 4\sqrt{2}}{4} = 1 \pm \sqrt{2}$$

$$ax^2 + bx + c = 2x + 1 \Rightarrow ax^2 + (b-2)x + (c-1) = 0$$

$$x_1 + x_2 = 2+2=4 \Rightarrow S = \frac{-(b-2)}{a} = 4 \Rightarrow 2-b=4a \Rightarrow 4a+b=2$$

$$x_1 x_2 = 2 \times 2 = 4 \Rightarrow p = \frac{c-1}{a} = 4 \Rightarrow c-1=4a \Rightarrow c=4a+1$$

$$\text{عوض از } c \Rightarrow \boxed{c=4} \rightarrow c=4a+1 \Rightarrow 4=4a+1 \Rightarrow a=3/4$$

$$4a = -4 \Rightarrow a = -1 \rightarrow 4(-1) + b = 2 \Rightarrow b = 6$$

$$\Rightarrow x = \frac{-b}{2a} = \frac{-6}{-2} = 3 \quad \text{جواب}$$

$$\text{مساوی کنیم} \Rightarrow y=x \quad x^2 + (m+1)x + m+4 = x$$

$$\text{اول} \quad x^2 + (m+1)x - x + m+4 = 0 \Rightarrow$$

$$x^2 + (m+1-1)x + m+4 = 0 \Rightarrow x^2 + mx + m+4 = 0 \quad \Delta = b^2 - 4ac$$

$$\Delta = 0 \Rightarrow m^2 - 4(m+4) = 0$$

$$(m)^2 - 4(1)(m+4) = 0 \Rightarrow m^2 - 4m - 16 = 0$$

$$m = \frac{4 \pm \sqrt{16 + 64}}{2} = m = 2 \pm 2\sqrt{5}$$