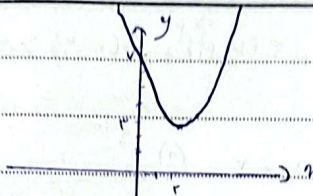
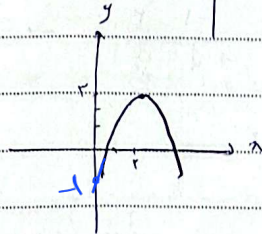


$$\text{a) } \text{ext} \left| \begin{array}{l} -\frac{b}{2a} = \frac{5}{2} = r \\ 5 - 1 + r = 3 \end{array} \right.$$



$$\text{b) } \text{ext} \left| \begin{array}{l} -\frac{b}{2a} = \frac{-5}{-2} = r \\ -5 + 1 - 1 = 3 \end{array} \right.$$

$$\frac{c}{a} = -\frac{1}{-1} = 1 \rightarrow \text{شبهه}$$



$$\text{a) } \Delta > 0 \rightarrow b^2 - 4ac > 0 \rightarrow (m+1)^2 - 4(r)(\frac{1}{r}m+r) > 0 \rightarrow m^2 + 1 + 2m - (4m + 4) > 0$$

$$\rightarrow m^2 + 1 + 2m - 4m - 4 > 0 \rightarrow m^2 - 2m - 3 > 0 \rightarrow (m-3)(m+1) > 0$$

$$\frac{-r}{2} < \frac{a}{b+r} < \frac{m}{2} \quad \text{①}$$

$$P < 0 \rightarrow \frac{c}{a} < 0 \rightarrow \frac{\frac{1}{r}m+r}{r} < 0 \rightarrow \frac{1}{r}m+r < 0 \rightarrow m < -r \rightarrow m < -5 \quad \text{②} \rightarrow \text{نقطة: } m < -5$$

$$\rightarrow m \in (-\infty, -5)$$

$$\text{b) } \Delta = 0 \rightarrow b^2 - 4ac = 0 \rightarrow (m+1)^2 - 4(r)(\frac{1}{r}m+r) = 0 \rightarrow m^2 + 1 + 2m - (4m + 4) = 0$$

$$\rightarrow m^2 - 2m - 3 = 0 \rightarrow m = \frac{2 \pm \sqrt{4 + 12}}{2} = \frac{2 \pm 4}{2} \rightarrow m = -1 \text{ or } m = 3$$

$$\rightarrow \text{نقطة: } m = \frac{-r}{2} = -\frac{5}{2}$$

$$P > 0 \rightarrow \frac{1}{r}m+r > 0 \rightarrow \frac{1}{r}m > -r \rightarrow m > -5 \quad \text{②}$$

$$\text{c) } \Delta < 0 \rightarrow (m+1)^2 - 4(r)(\frac{1}{r}m+r) < 0 \rightarrow (m-3)(m+1) < 0 \rightarrow \frac{-r}{2} < \frac{a}{b+r} < \frac{m}{2} \rightarrow -3 < m < 1$$

$$\text{d) } \Delta \geq 0 \rightarrow (m+1)^2 - 4(r)(\frac{1}{r}m+r) \geq 0 \rightarrow (m-3)(m+1) \geq 0 \rightarrow \frac{-r}{2} < \frac{a}{b+r} < \frac{m}{2} \rightarrow -3 < m < 1$$

$$\text{e) } 5 = -\frac{b}{a} < 0 \rightarrow \frac{r(m+1)}{m-r} < 0 \rightarrow \frac{-1}{+d} < \frac{r}{-g} < 0 \rightarrow -1 < m < r \quad \text{①}$$

$$P = \frac{c}{a} > 0 \rightarrow \frac{1}{m-r} > 0 \rightarrow m > r \quad \text{②}$$

$$\text{نقطة: } \emptyset$$

$$\Delta > 0 \rightarrow b^2 - 4ac > 0 \rightarrow [-2(m+1)]^2 - 4(m-2)(1) > 0 \rightarrow 4(m+1)^2 - 4(m-2) > 0$$

$$\rightarrow m^2 + 1 + 2m - 1 \cdot m + 2 > 0 \rightarrow m^2 - 1m + 3 > 0$$

$$\Delta = b^2 - 4ac = 1 - 12 < 0 \rightarrow \text{شبهه دائري} \quad \text{③}$$

Arman

$$b) \Delta > 0 \rightarrow b^2 - 4ac > 0 \rightarrow r(m+1)^2 - r(m-r) > 0 \rightarrow r^2 m^2 + 12r^2 m - 12r^2 + r^2 > 0 \quad (3)$$

$$p \cdot \frac{1}{a} < 0 \rightarrow \frac{1}{m-r} < 0 \rightarrow m < r \quad (4)$$

$$10203 \rightarrow m = (-1, 2)$$

$$s = \frac{1}{a} < 0 \rightarrow \frac{r(m+1)}{m-r} < 0 \rightarrow \frac{-1}{+1} \cdot \frac{r}{-r} \rightarrow -1 < 0 \quad (2)$$

$$c) \alpha < 0 \rightarrow \alpha < -1 \rightarrow m-r < 0 \rightarrow m < r$$

$$b) \frac{1}{r_1} = \frac{1}{r_2} \rightarrow b = c \rightarrow r(m+1) = r(m-r) \rightarrow -m-1 = r-m-1 \rightarrow r = m+1$$

$$\Delta > 0 \rightarrow b^2 - 4ac > 0 \rightarrow (12 \sin \alpha)^2 > 4 \left(\frac{1}{r} \right) \left(\frac{1}{r} \right) \rightarrow 12 \sin^2 \alpha > \frac{4}{r^2} \rightarrow \sin^2 \alpha > \frac{1}{3}$$

$$-1 < \sin \alpha < 1 \rightarrow \sin^2 \alpha < 1 \rightarrow \sin \alpha < 1 \rightarrow \frac{r^2}{r^2} - r^2 + r = 0 \rightarrow r^2 - 12r + 9 = 0$$

$$\rightarrow \sin \alpha = -1 \rightarrow r^2 - 12r + 9 = 0 \rightarrow r^2 + 12r + 9 = 0 \rightarrow \Delta < 0 \rightarrow n = \frac{-12}{2} = -6$$

$$y = \frac{(x-1)(x+1)(x-4)}{(x-1)(x+1)} \rightarrow y = \frac{(x-4)}{(x-1)(x+1)}$$

$$y = -1(x+1)(x-4) = -1(4x^2 - 10x - 4) \rightarrow y = -4x^2 + 10x + 4$$

$$y_{max} = \frac{-\Delta}{4a} = \frac{-(b^2 - 4ac)}{4a} = \frac{-(149 - 4(-4)(4))}{4(-4)} = \frac{-(149 + 64)}{-16} = \frac{213}{16}$$

$$WS = AP + V \rightarrow r \left(-\frac{1}{a} \right) \cdot \Delta \left(\frac{1}{a} \right) + V \rightarrow r \left(\frac{m+r}{m} \right) = \Delta \left(-\frac{r}{m} \right) + V$$

$$\rightarrow \frac{r(m+r)}{m} = -1 + \frac{V}{m} \rightarrow r(m+1) = -m + V \rightarrow r^2 m^2 + 12r^2 m - 12r^2 + r^2 = -m + V$$

$$\alpha \beta = 1 \rightarrow \beta = \frac{1}{\alpha} \rightarrow \frac{\alpha + \beta}{\alpha} = 19$$

$$\begin{aligned}
 n=2 \rightarrow y_r &= r(r) + 1 = 1r \rightarrow 1r = 5a + 2b + 2 \times r \rightarrow \begin{cases} 5r = 12a + 4b + 12 \\ \Delta = 12a - 4b + 12 \\ \Delta = 4a + 3r \rightarrow \begin{bmatrix} 3a & r \\ a & 3 \end{bmatrix} \end{cases} \\
 n=3 \rightarrow y_r &= -4 + 1r = 1r \rightarrow r = 9a - 3b + 2 \times r \rightarrow \begin{cases} \Delta = 12a - 4b + 12 \\ \Delta = 4a + 3r \end{cases} \\
 r = 9(1) - 3b + 2 \rightarrow 9 = 3b \rightarrow \boxed{b=3} \\
 y = n^2 + 3b + 5 \rightarrow -\frac{b}{ra} = \boxed{-\frac{3}{r}}
 \end{aligned}$$

$$2n^2 + (m+1)n + m+4 = n \rightarrow 2n^2 + mn + m+4 = n \rightarrow \frac{-b \pm \sqrt{b^2 - 4ac}}{2a} = n$$

$$\rightarrow -m = \frac{b \pm \sqrt{b^2 - 4ac}}{2a} \rightarrow m^2 = m^2 - 12m - 41 \rightarrow 12m = -41 \Rightarrow \boxed{m = -\frac{41}{12}}$$

$$\Delta = 0 \rightarrow m = 12, -4$$