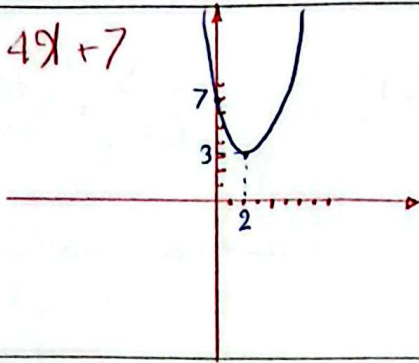
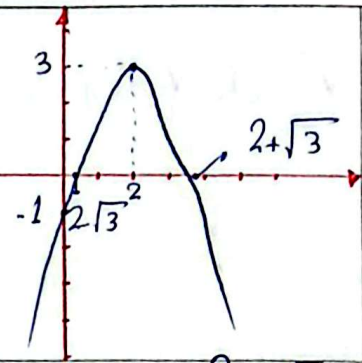


الف) $x^2 - 4x + 7$



ب) $-x^2 + 4x - 1$



الف) $\Delta > 0 \rightarrow (m+1)^2 - 4m - 16 > 0 \rightarrow m^2 - 2m - 15 > 0 \rightarrow m \in (-\infty, -3) \cup (5, +\infty)$

ب) $\Delta = 0 \rightarrow m^2 - 2m - 15 = 0 \rightarrow m \in \{-3, 5\}$

ج) $\Delta < 0 \rightarrow m^2 - 2m - 15 < 0 \rightarrow m \in (-3, 5)$

د) $\Delta \geq 0 \rightarrow m^2 - 2m - 15 \geq 0 \rightarrow m \in (-\infty, -3] \cup [5, +\infty)$

الف) $\Delta > 0 \rightarrow 4m^2 - 32m + 84 > 0 \rightarrow m^2 - 8m + 21 > 0 \rightarrow$ ریشه ندارد
 $S < 0 \rightarrow \frac{2m+2}{m-2} < 0 \rightarrow 2m+2 < 0 \rightarrow m < -1$
 $P > 0 \rightarrow \frac{10}{m-2} > 0 \rightarrow m-2 > 0 \rightarrow m > 2$

ب) $\Delta > 0 \rightarrow$ ریشه ندارد
 $S < 0 \rightarrow \frac{2m+2}{m-2} < 0 \rightarrow 2m+2 > 0 \rightarrow m > -1$
 $P < 0 \rightarrow \frac{10}{m-2} < 0 \rightarrow m-2 < 0 \rightarrow m < 2$
 $\rightarrow -1 < m < 2$

$\frac{2x^2}{3} - (2\sin\alpha)x + \frac{3}{2} = 0 \rightarrow \Delta \geq 0 \rightarrow 4\sin^2\alpha - 4 \geq 0$

$\sin\alpha \in [-1, 1] \rightarrow \sin^2\alpha \in [0, 1] \rightarrow 4\sin^2\alpha - 4 \leq 0$

$1 \rightarrow \frac{2}{3}x^2 - 2x + \frac{3}{2} = 0 \rightarrow x = 1/5 \checkmark$

$-1 \rightarrow \frac{2}{3}x^2 + 2x + \frac{3}{2} = 0 \rightarrow x = -1/5$ منفی است

برای آنکه از هر 4 ناحیه بلند از آنجا که عرض آن $2(m+1) + 10$ باشد و آنجا که $m < 2$ باشد و آنجا که $m < 2$ باشد و آنجا که $m < 2$ باشد

$\frac{-b}{2a} = -2 \rightarrow \frac{2m+2}{2(m-2)} = -2 \rightarrow -2m+4 = m+1 \rightarrow m = 1$

$$y, \frac{(3x^2 - 2x - 1)(2x^2 - 5)}{1 - x^2} \rightarrow \frac{(x-1)(3x+1)(x+1)(2x-5)}{(1-x)(1+x)}$$

$$-(6x^2 - 15x + 2x - 5) = -6x^2 + 13x + 5 \rightarrow \frac{-\Delta}{4a} = \frac{-(169 - 120)}{-24} = \frac{289}{24}$$

$$mx^2 - (m+2)x - 2 = 0$$

$$\alpha + \beta = \frac{m+2}{m}, s = \frac{3}{2}$$

$$\alpha \cdot \beta = \frac{-2}{m}, p = \frac{-1}{2}$$

$$\alpha^2 + \beta^2 = s^2 - 2p = \frac{9}{4} + 1 = \frac{13}{4}$$

$$3s, 5p + 7 \rightarrow \frac{3m+6}{m}, \frac{-10}{m} + 7 = 3m+6, -10+7m \rightarrow m=4$$

$$x^2 - 5x + 2 = 0, \alpha + \beta = 5, \alpha \cdot \beta = 2 \rightarrow \beta = \frac{2}{\alpha}$$

$$\frac{4\alpha + \beta^5}{5\beta^2} = \frac{4\alpha}{5\beta^2} + \frac{\beta^3}{5} \rightarrow \frac{4\alpha}{\frac{4\alpha^5}{\alpha^2}} + \frac{\beta^3}{5} = \frac{\alpha^3}{5} + \frac{\beta^3}{5}$$

$$(19) = \frac{125 - 30}{5}$$

$$= \frac{5^3 - 3 \cdot 5p}{5}$$

$$y, ax^2 + bx + c = 2x + 10$$

$$b^3 a, 1 = 5a, 5$$

$$ax^2 + bx + 4, 2x + 10 \xrightarrow{x=2}$$

$$4a + 2b + 4, 14 = 2a + b + 5$$

$$9a - 3b + 4, 4 = 3a - b + 0$$

$$\frac{-b}{2a} = \frac{-3}{2} \rightarrow x = \frac{-3}{2}$$

$$y, 2x^2 + (m+1)x + m + 6$$

$$2x^2 + (m+1)x + m + 6, x \rightarrow 2x^2 + (m)x + m + 6 \rightarrow \Delta = 0$$

$$\rightarrow m^2 - 8m - 48 = 0 \rightarrow \frac{8 \pm 16}{2} = \frac{24}{2} = 12 \text{ غلط } \frac{-4}{2} = -2 \text{ غلط } m = -4$$

اول باید در معادله صحت برده x, y باشد