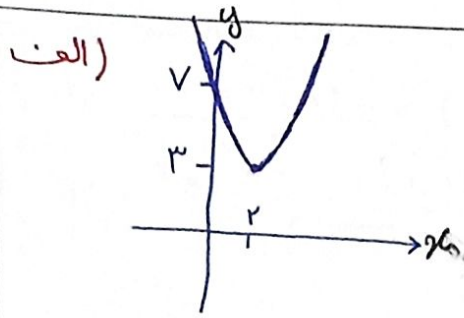
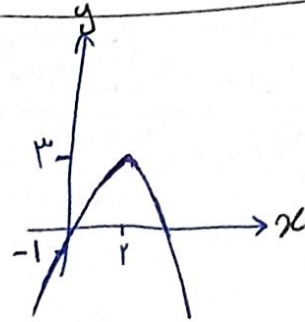




(ب)



(الف) $(m+1)^2 - 4m - 14 > 0 \rightarrow m^2 - 2m - 13 > 0$
 $(m-5)(m+3) > 0 \rightarrow m > 5 \text{ یا } m < -3$
 (ب) $(m-5)(m+3) = 0 \rightarrow m = 5 \text{ یا } -3$
 (ج) $(m-5)(m+3) < 0 \rightarrow m \in (-3, 5)$

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

(الف) $p > 0 \rightarrow \frac{10}{m-2} > 0 \rightarrow m > 2$ و $S < 0 \rightarrow \frac{2(m+1)}{m-2} < 0 \rightarrow m \in (-1, 2)$
 $\textcircled{I} \cap \textcircled{II} = \emptyset$

(ب) $p < 0 \rightarrow \frac{10}{m-2} < 0 \rightarrow m < 2$ و $\frac{2(m+1)}{m-2} < 0 \rightarrow m \in (-1, 2)$ و $\Delta > 0 \rightarrow \frac{c}{a} < 0$ چون دلتا نیز خود به خود بزرگتر از صفر است.
 $\textcircled{I} \cap \textcircled{II} = (-1, 2)$

(الف) $p < 0 \rightarrow \frac{10}{m-2} < 0 \rightarrow m < 2$ و $\Delta > 0 \rightarrow 4(m+1)^2 - 40(m-2) > 0$
 $m \in (-\infty, 2)$ ← هواره برقرار است. ← $4m^2 - 32m + 164 > 0$
 $\Delta < 0$ و $a > 0$

(ب) $\frac{m+1}{m-2} = -2 \rightarrow m+1 = -2m+4 \rightarrow 3m = 3 \rightarrow m = 1$

$4 \sin^2 \alpha - 4 \geq 0 \rightarrow 4(\sin^2 \alpha - 1) \geq 0 \rightarrow \sin^2 \alpha = 1 \rightarrow \sin \alpha = \pm 1 \rightarrow \sin \alpha = 1$

$$\frac{(x-1)(x+1)(x-a)(x+1)}{-(x+1)(x-1)} = -(x+1)(x-a) \rightarrow -9x^2 + 13x + 4$$

$$y = \frac{\Delta}{4a} = \frac{13^2 - 4 \cdot 9 \cdot 4}{4 \cdot 9} \rightarrow \max$$

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$$3 \left(\frac{m+2}{m} \right) = 5 \left(\frac{-2}{m} \right) + 1 \rightarrow \frac{3m+6+10-5m}{m} = 0$$

$$\frac{-2m+16}{m} = 0 \rightarrow m=8 \rightarrow 3x^2 - 9x - 2 = 0$$

$$\rightarrow \alpha^2 + \beta^2 = \frac{13}{9}$$

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$$\frac{3\alpha}{5\beta^2} + \frac{\beta^2}{5} \rightarrow \alpha\beta=2 \rightarrow \beta=\frac{2}{\alpha} \rightarrow \frac{\alpha^2 + \beta^2}{5} = \frac{9}{5} = 1.8$$

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$$C=5 \rightarrow (2, 14), (-3, 5) \rightarrow \begin{cases} 2a+14b=10 \\ 9a-3b=0 \end{cases} \rightarrow \begin{cases} a=1 \\ b=3 \end{cases}$$

$$x^2 + 3x + 5 \rightarrow \frac{-3}{2} = \frac{-b}{2a}$$

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$$y=x \rightarrow 2x^2 + (m+1)x + m+4 = x \rightarrow 2x^2 + mx + m+4 = 0$$

$$m^2 - 4 \cdot 2 \cdot (m+4) = 0 \rightarrow (m-12)(m+8) = 0 \rightarrow \begin{cases} m=12 \\ m=-8 \end{cases}$$

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