

الف) $\begin{cases} -\frac{b}{2a} \Rightarrow 2 \\ -\frac{\Delta}{4a} \Rightarrow \frac{-(12-4)}{4} \Rightarrow \frac{12}{4} = 3 \end{cases}$ ۵

ب) $\begin{cases} -\frac{b}{2a} \Rightarrow 2 \\ -\frac{\Delta}{4a} \Rightarrow \frac{-(12-4)}{-4} = 3 \end{cases}$ ۵

$C = -1$

الف) $\Delta > 0 \Rightarrow (m+1)^2 - 4(\frac{1}{2}m+2) > 0 \Rightarrow m^2 - 4m - 1 > 0$
 $(m+2)(m-4) > 0 \rightarrow \frac{-2}{1+4-4} \rightarrow (-\infty, -2) \cup (4, +\infty)$

ب) $\Delta = 0 \Rightarrow (m+2)(m-4) = 0 \Rightarrow m \in \{-2, 4\}$

ج) $\Delta < 0 \Rightarrow (m+2)(m-4) < 0 \Rightarrow \frac{-2}{1+4-4} \rightarrow (-2, 4)$

د) $\Delta \geq 0 \Rightarrow (m+2)(m-4) \geq 0 \Rightarrow \frac{-2}{1+4-4} \rightarrow (-\infty, -2] \cup [4, +\infty)$

الف) $p > 0 \rightarrow \frac{1}{m-2} > 0 \rightarrow \frac{2}{-1-2} \rightarrow (2, +\infty)$
 $5 < 0 \rightarrow 1 < m < 2 \rightarrow m \in \emptyset$

ب) $p < 0 \rightarrow \frac{1}{m-2} < 0 \rightarrow \frac{2}{-1-2} \rightarrow (-\infty, 2)$
 $s < 0 \rightarrow \frac{2m+2}{m-2} < 0 \rightarrow \frac{-1}{1-2} \rightarrow (-1, 2)$

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

الف) $C = a < 0 \Rightarrow \ln(m-2) < 0 \Rightarrow (m-2) < 0 \Rightarrow m < 2$

ب) $\frac{-b}{2a} = -2 \Rightarrow \frac{2m+2}{2m-2} = -2 \Rightarrow 2m+2 = -4m+4 \Rightarrow 6m = 2 \Rightarrow m = \frac{1}{3}$
 $m = \frac{1}{3}$

$\Delta \geq 0 \rightarrow 5 \sin^2 \alpha - 4(\frac{1}{2}) (\frac{1}{2}) \geq 0 \Rightarrow \{ \sin^2 \alpha - \frac{1}{2} \geq 0 \Rightarrow \sin^2 \alpha \geq \frac{1}{2} \Rightarrow \sin \alpha \geq \frac{1}{\sqrt{2}} \text{ or } \sin \alpha \leq -\frac{1}{\sqrt{2}} \}$

$\sin^2 \alpha \geq 1 \Rightarrow \sin \alpha \geq 1 \text{ or } \sin \alpha \leq -1 \Rightarrow \sin \alpha = 1$

$\frac{1}{2}x^2 - 2x + \frac{9}{2} = 0 \Rightarrow (2x+1)^2 = 0 \rightarrow x = -\frac{1}{2}$

$$\frac{(x^2 - 4x - 4)(x^2 - 4x - 10)}{(1 - x^2)} = \frac{(4x+1)(x-1)(x+1)(x-4)}{-(x-1)(x+1)} \Rightarrow$$

$$-(4x+1)(x-4) = -4x^2 + 16x + 4 \rightarrow \frac{-\Delta}{\epsilon_0} = \frac{-(16^2 - 4(-4)(4))}{-4} =$$

$$\frac{-16^2}{-4} = \frac{256}{4} = 64$$

$$p = -\frac{r}{m}$$

$$s = \frac{m+r}{m}$$

$$c\left(\frac{m+r}{m}\right) = d\left(-\frac{r}{m}\right) + v \Rightarrow \frac{cm+r}{m} = \frac{vm-r}{m} \Rightarrow$$

$$cm^2 + 4m = vm^2 - 10m \Rightarrow 14m = 5m^2 = 5m = m^2 \Rightarrow$$

$$m(m-5) = 0 \Rightarrow m = 5 \quad \text{خرج من } \epsilon \rightarrow \text{منقول}$$

$$-b \pm \sqrt{\Delta} = 5 \pm \sqrt{25} = \frac{5 \pm 5}{5} = \frac{10}{5} = 2$$

$$\left(\frac{5+\sqrt{14}}{5}\right)^2 + \left(\frac{5-\sqrt{14}}{5}\right)^2 = \frac{2^2}{14} = \frac{4}{14} = \frac{2}{7} = \frac{1}{\frac{7}{2}}$$

$$s = d$$

$$p = r \Rightarrow \alpha \cdot \beta = r \Rightarrow \alpha^2 \beta^2 = r^2 \Rightarrow \beta^2 = \frac{r^2}{\alpha^2}$$

$$\frac{\epsilon \alpha + \beta \omega}{2\beta^2} = \frac{\epsilon}{2} \frac{\alpha}{\beta^2} + \frac{\beta}{2} \Rightarrow \frac{\alpha^2}{2} + \frac{\beta}{2} = \frac{s^2 - \epsilon sp}{2} \Rightarrow$$

$$\frac{12d - \epsilon_0}{2} = 19$$

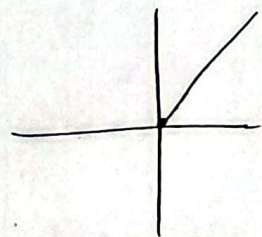
$$y = ax^2 + bx + c \xrightarrow{x=2} \begin{cases} 4a + 2b + c = 14 \\ 4a - 2b - c = 4 \end{cases} \xrightarrow{c=2} \begin{cases} 4a - b = 10 \\ 4a - 2b = 0 \end{cases}$$

$$4a - b = 10 \quad 4a - 2b = 0 \Rightarrow -b = -2a \Rightarrow b = 2a$$

$$4a = 10 \Rightarrow a = \frac{5}{2}$$

$$y = 2x^2 + (m+1)x + m+4 \Rightarrow x = 2x^2 + (m+1)x + m+4$$

$$\Rightarrow 2x^2 + mx + m+4$$



$$m = 2 \Rightarrow 2x^2 - 2x + 6 = 0$$

$$\Delta = 0 \rightarrow m^2 - 12m + 16 = 0$$

$$(m-12)(m-4) = 0$$

$$m < 12 \quad \text{خرج من } \epsilon \rightarrow \text{منقول}$$

$$x(-2, -2)$$