

الف) $x^2 - 4x + 9 = 1$ $(x-3)^2 = 1 \Rightarrow x-3 = \pm 1 \Rightarrow x = \begin{cases} x=2 \\ x=4 \end{cases}$ ب) $x^2 + 8x + 14 = 9$ $(x+4)^2 = 9 \Rightarrow x+4 = \pm 3 \Rightarrow x = \begin{cases} x=-1 \\ x=-7 \end{cases}$	1
الف) $\begin{matrix} \text{جمع} = 5 \\ \text{فرق} = 6 \end{matrix} \Rightarrow (x-2)(x-3) = 0 \Rightarrow x = \begin{cases} x=2 \\ x=3 \end{cases}$ ب) $\begin{matrix} \text{جمع} = 5 \\ \text{فرق} = -14 \end{matrix} \Rightarrow (x-7)(x+2) = 0 \Rightarrow x = \begin{cases} x=-2 \\ x=7 \end{cases}$	2
الف) $x = \frac{3 \pm \sqrt{9+20}}{2} \Rightarrow x = \frac{3 \pm \sqrt{29}}{2}$ ب) $x = \frac{4 \pm \sqrt{14-4}}{4} \Rightarrow x = \frac{4 \pm \sqrt{10}}{4}$	3
الف) $\Delta \rightarrow x = \frac{3 \pm \sqrt{9-1}}{2} = \begin{cases} x = \frac{3+1}{2} = 2 \\ x = \frac{3-1}{2} = 1 \end{cases}$ ب) $\xrightarrow{\text{درستی}} x^2 + x - 12 = 0 \Rightarrow (x-3)(x+4) = 0 \Rightarrow \begin{cases} x = 3 \div 4 = \frac{3}{4} \\ x = -4 \div 4 = -1 \end{cases}$	4
الف) $x^2 - 12x + 36 = 0 \Rightarrow (x-6)(x-6) = 0 \Rightarrow \begin{cases} x = 6 \div 6 = 1 \\ x = 6 \div 6 = 1 \end{cases}$ ب) $x^2 - 10x + 21 = 0 \Rightarrow (x-3)(x-7) = 0 \Rightarrow \begin{cases} x = 7 \div 3 = 1 \\ x = 7 \div 3 = \frac{7}{3} \end{cases}$	5

$$\text{الف) } \rightarrow \Delta_2(\omega)^2 - f(-3)(-1) = 13 > 0 \Rightarrow \boxed{\text{ریشه دارد}}$$

$$\rightarrow \Delta_2(-1)^2 - f(2)(2) = -15 \Rightarrow \boxed{\text{ریشه ندارد}}$$

$$\rightarrow \Delta_2(-2)^2 - f(2)(2) = 0 \Rightarrow \boxed{\text{ریشه مضاعف دارد}}$$

$$\rightarrow \Delta_2(-1)^2 - f(2)(1) = -5 \Rightarrow \boxed{\text{ریشه ندارد}}$$

$$\Delta_2 b^2 - 4ac = (3)^2 - 4(2)(a) = 9 - 8a$$

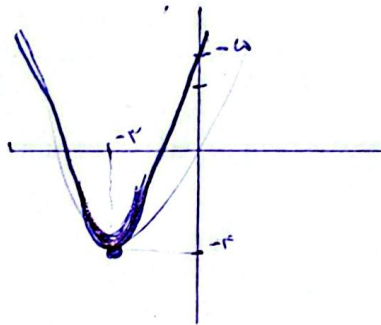
$$\text{الف) } 9 - 8a > 0 \Rightarrow \boxed{a < \frac{9}{8}}$$

$$\rightarrow 9 - 8a \geq 0 \Rightarrow \boxed{a \leq \frac{9}{8}}$$

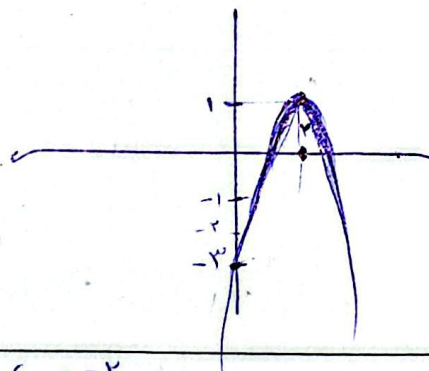
$$\text{ج) } 9 - 8a < 0 \Rightarrow \boxed{a > \frac{9}{8}}$$

$$\text{د) } 9 - 8a \geq 0 \Rightarrow \boxed{a \leq \frac{9}{8}}$$

$$\min \left| \begin{array}{l} \frac{-b}{a} = -3 \\ -f \end{array} \right.$$



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



$$S = \frac{-b}{a} = \frac{3}{1} = 3 \quad P = \frac{c}{a} = -2$$

$$\text{الف) } = (3)^2 - 2(-2) = 13$$

$$\rightarrow = (3)^3 - 3(3)(-2) = 45$$