

الف) $x^2 - 4x + 8 = 0 \Rightarrow x^2 - 4x + 8 + 1 = x^2 - 4x + 9 = (x-3)^2 = 1$

$(x-3)^2 = 1 \Rightarrow x-3 = \pm 1 \Rightarrow x = \begin{matrix} 4 \\ 2 \end{matrix}$

ب) $x^2 + 11x + 17 = 0 \Rightarrow x^2 + 11x + 17 + 9 = x^2 + 11x + 26 = (x+4)^2 = 9 \Rightarrow$

$x+4 = \pm 3 \Rightarrow x = \begin{matrix} -1 \\ -7 \end{matrix}$

الف) $x^2 - 5x + 4 = 0 \Rightarrow (x-2)(x-3) = 0 \Rightarrow x = \begin{matrix} 2 \\ 3 \end{matrix}$
 $-2 \cdot 3 = -6$ و $(-2)(-3) = 6$

ب) $x^2 - 5x - 14 = 0 \Rightarrow (x-7)(x+2) = 0 \Rightarrow x = \begin{matrix} -2 \\ 7 \end{matrix}$
 $-7 + 2 = -5$ و $(-7)(2) = -14$

الف) $x^2 - 3x - 5 = 0 \Rightarrow \frac{3 \pm \sqrt{9+20}}{2} = \frac{3 \pm \sqrt{29}}{2} = x$

ب) $2x^2 - 4x + 1 = 0 \Rightarrow \frac{4 \pm \sqrt{16-8}}{4} = \frac{4 \pm \sqrt{8}}{4} = x$

الف) $x^2 - 3x + 2 = 0 \Rightarrow (x-2)(x-1) = 0 \Rightarrow x = \begin{matrix} 1 \\ 2 \end{matrix}$

ب) $4x^2 + x - 3 = 0 \Rightarrow \frac{-1 \pm \sqrt{1+48}}{8} = \frac{-1 \pm \sqrt{49}}{8} \Rightarrow$

$\frac{-1+7}{8} = \frac{6}{8} = \frac{3}{4}$ و $\frac{-1-7}{8} = \frac{-8}{8} = -1 \Rightarrow x = \begin{matrix} 3/4 \\ -1 \end{matrix}$

الف) $5x^2 - 12x + 7 = 0 \Rightarrow x^2 - 12x + 35 = 0 \Rightarrow (x-5)(x-7) = 0$

$x = \begin{matrix} 5 \\ 7 \end{matrix}$

ب) $3x^2 - 10x + 7 = 0 \Rightarrow x^2 - 10x + 21 = 0 \Rightarrow (x-3)(x-7) = 0$

$x = \begin{matrix} 3 \\ 7 \end{matrix}$

الف) $-3x^2 + 5x - 1 = 0 \Rightarrow \frac{-5 \pm \sqrt{25 - 12}}{-6} =$
 $\frac{-5 \pm \sqrt{13}}{-6} = x$

ب) $2x^2 - x + 2 = 0 \Rightarrow \frac{1 \pm \sqrt{1 - 16}}{4} = x$
 Δ منفی شد

پ) $2x^2 - 4x + 2 = 0 \Rightarrow \frac{4 \pm \sqrt{16 - 16}}{4} =$
 $\frac{4}{4} = 1 = x$

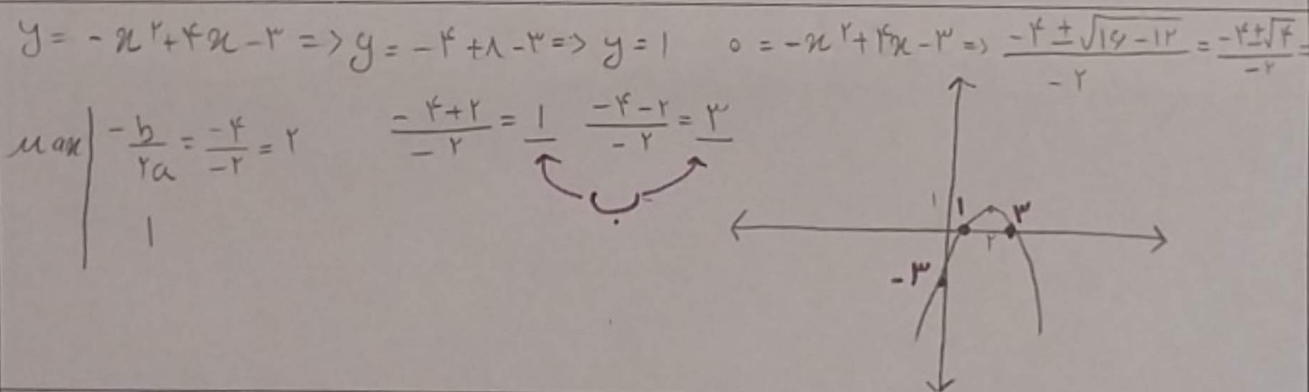
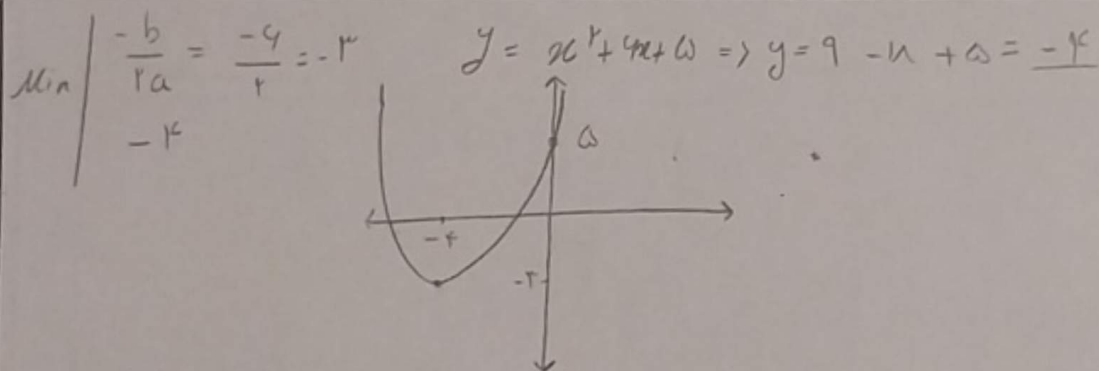
ت) $2x^2 - x + 1 = 0 \Rightarrow \frac{1 \pm \sqrt{1 - 8}}{4} =$
 Δ منفی شد

الف) $2x^2 - 3 + \frac{a}{x} = 0 \Rightarrow \frac{3 \pm \sqrt{9 - 4a}}{4} =$
 $\frac{3+1}{4} = \frac{a}{4} = 1, 25, \frac{3-1}{4} = \frac{1}{2} \Rightarrow a \leq 1$

ب) $2x^2 - 3x + a = 0 \Rightarrow \sqrt{2x^2} \times \sqrt{a} \times 2 = 3x =$
 $\sqrt{2} \times \sqrt{a} \times 2 = 3 \Rightarrow \sqrt{2} \times \sqrt{a} = \frac{3}{2} \Rightarrow a = \frac{9}{8} = 1, 125$
 $\sqrt{a} = n$

ج) $2x^2 - 3 + \frac{a}{x} = 0 \Rightarrow \frac{3 \pm \sqrt{9 - 4a}}{4} =$
 $\frac{3 \pm \sqrt{-7}}{4} \Rightarrow \Delta$ منفی شد
 Δ منفی شد

د) $2x^2 - 3x + a = 0$
 همواره حقیقی هم غیر حقیقی پس a هر عددی می توان



$\Delta = \frac{b^2}{4a} = P$
 $x^2 - 3x - 2 = 0 \Rightarrow P = \frac{-9}{1} = -9, S = \frac{3}{1} = 3 \Rightarrow$
 $\Delta = \frac{b^2}{4a} = S$
 $S^2 - 4P = 9 + 8 = 17, S^3 - 3SP = 27 + 18 = 45$