

الف) $[-3, 4]$ ، $Min \leq a > 0$

ب) $y = x^2 + 4x + 5$
 $ax^2 + bx + c$
 $-\frac{b}{2a} = -3$
 $y = (-3)^2 + 4(-3) + 5 = -4$

ext $\left| \begin{array}{c} -\frac{b}{2a} \\ \Delta \\ 4ac \end{array} \right| 0$

الف) $[1, 2]$

ب) $y = -x^2 + 4x - 3$
 $-\frac{b}{2a} = \frac{-4}{-2} = +2$
 $y = -(2)^2 + 4(2) - 3 = 1$

ext $\left| \begin{array}{c} -\frac{b}{2a} \\ \Delta \\ 4ac \end{array} \right| 0$

ب) ریشه‌های معادله $\left[\begin{array}{c} 1 \\ 0 \end{array} \right] \left[\begin{array}{c} 2 \\ 0 \end{array} \right]$ ✓

$\frac{-b \pm \sqrt{\Delta}}{2a} \rightarrow \frac{-4 \pm \sqrt{4}}{-2} = 1, 3$

الف) $\Delta > 0$ باید

$\Delta = (-3)^2 - 4(1)(a) = 9 - 4a \rightarrow 9 - 4a > 0 \Rightarrow 4a < 9 \Rightarrow a < \frac{9}{4} = 1,125$
 $\rightarrow a = 1 / -2$ ✓

ب) $\Delta = 0$

$\Delta = 9 - 4a \rightarrow 9 - 4a = 0 \Rightarrow 9 = 4a \Rightarrow a = \frac{9}{4} = 1,125$ ✓

ج) $\Delta < 0$

$\Delta = 9 - 4a \rightarrow 9 - 4a < 0 \Rightarrow 9 < 4a \Rightarrow a > \frac{9}{4} = 1,125 \rightarrow a = 2 / 3$

د) $\Delta \geq 0$

$\Delta = 9 - 4a \geq 0 \Rightarrow 4a \leq 9 \Rightarrow a \leq \frac{9}{4}$ $a \leq 1,125$ ($1 \frac{1}{4}$)

الف) $x^2 - 2x - 1 = 0$
 $x^2 - 2x + 1 = 2$
 $(x-1)^2 = 2$
 $x-1 = \pm\sqrt{2}$
 $x = 1 + \sqrt{2} / 1 - \sqrt{2}$

ب) $x^2 - x - 1 = 0$
 $x^2 - x + \frac{1}{4} = \frac{5}{4}$
 $(x - \frac{1}{2})^2 = \frac{5}{4}$
 $x - \frac{1}{2} = \pm\sqrt{\frac{5}{4}}$
 $x = \frac{1 + \sqrt{5}}{2} / \frac{1 - \sqrt{5}}{2}$

الف) $x^2 - 2x - 1$
 $\frac{-b \pm \sqrt{\Delta}}{2a} \rightarrow \frac{-(-2) \pm \sqrt{(-2)^2 - 4(1)(-1)}}{2(1)}$
 $= \frac{2 \pm \sqrt{4+4}}{2} = \frac{2 \pm 2\sqrt{2}}{2} = \frac{2(1 \pm \sqrt{2})}{2}$
 $= 1 \pm \sqrt{2}$

ب) $x^2 + x - 4 = 0$
 $\frac{-b \pm \sqrt{\Delta}}{2a} = \frac{-1 \pm \sqrt{1+16}}{2} = \frac{-1 \pm \sqrt{17}}{2}$
 $\frac{-1 + \sqrt{17}}{2} / \frac{-1 - \sqrt{17}}{2}$

الف) $x^2 - 11x + 21 = 0$ $(x-4)(x-7) = 0$ $x = 4$ $x = 7$ کیا نامزدی	ب) $x^2 + 3x - 21 = 0$ $(x+7)(x-4) = 0$ $x = -7$ $x = 4$	6
الف) $5x^2 - 12x + 7 = 0$ $a+c+b=0 < \frac{c}{a}$ $x = 1$ $x = \frac{7}{5}$	ب) $3x^2 - 10x + 7 = 0$ $a+c+b=0 < \frac{c}{a}$ $x = 1$ $x = \frac{7}{3}$	7
الف) $2x^2 - 5x + 3 = 0$ $a+c+b=0 < \frac{c}{a}$ $x = 1$ $x = \frac{3}{2}$	ب) $2x^2 + 5x + 3 = 0$ $a+c=b < \frac{-1}{-\frac{c}{a}}$ $x = -1$ $x = -\frac{3}{2}$	
	ج) $2x^2 - 5x + 1 = 0$ $\Delta \rightarrow \frac{-b \pm \sqrt{\Delta}}{2a}$ $\Rightarrow \frac{5 \pm \sqrt{25-4}}{4}$ $\frac{5+\sqrt{17}}{4} / \frac{5-\sqrt{17}}{4}$	
	د) $4x^2 + 7x + 9$ $\frac{-b \pm \sqrt{\Delta}}{2a}$ $\frac{-7 \pm \sqrt{49-144}}{8}$ حقیقی نہیں ہے رادیکنڈ نہیں ہے رہے حقیقی ہمارے	8
$x^2 - 3x - 2 = 0$ $\frac{-b \pm \sqrt{\Delta}}{2a} = \frac{3 \pm \sqrt{17}}{2}$ $S = \frac{3+\sqrt{17}}{2} + \frac{3-\sqrt{17}}{2} = \frac{-b}{a} = 3$ $P = \frac{c}{a} = -2$	الف) $S^2 - 2P = (3)^2 - 2(-2) = 9 + 4 = 13$ ب) $S^3 - 3SP = (3)^3 - 3(3)(-2) = 27 + 18 = 45$	9
$\begin{pmatrix} V \\ 5 \end{pmatrix} = \begin{pmatrix} V \\ 2 \end{pmatrix} \rightarrow \begin{pmatrix} V \\ 2 \end{pmatrix} + \begin{pmatrix} 9 \\ 2 \end{pmatrix} = \frac{V \times 9^3}{x \times 1} + \frac{9 \times 1^4}{x \times 1} = 21 + 9 = 30$	الف)	
$\frac{9^3 \times 1^4}{1^3 \times 1^1} - \frac{1^4 \times 9}{1^1 \times 1^3} = 1^4 - 9 = -8$	ب)	10