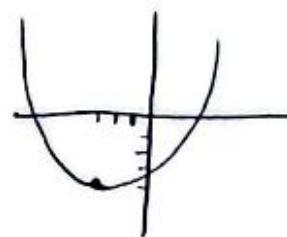


$$\text{Min} \left| \begin{array}{c} -b \\ 2a \\ -\Delta \\ 4a \end{array} \right| \Rightarrow \text{Min} \left| \begin{array}{c} -3 \\ -4 \end{array} \right|$$



$$\text{Max} x \left| \begin{array}{c} 2 \\ 1 \end{array} \right|$$



$$\begin{aligned} x^2 - 4x + 3 &= 0 \\ \Rightarrow (x-1)(x-3) &= 0 \\ x=1, \quad x=3 &\leftarrow \text{در نقاط} \end{aligned}$$

★ برای اینکه جواب ۳ قسمت اول را بدست آوریم باید حواسمان به Δ باشد.

- الف) دو جواب متمایز حقیقی: $a < \frac{9}{8}$
 ب) یک جواب مضاعف: $a = \frac{9}{8}$
 ج) بدون جواب حقیقی: $a > \frac{9}{8}$
 د) $\bullet$ بیشه داشته باشد: $a = \mathbb{R} - [\frac{9}{8}]$

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

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

الف) $x^2 - 2x - 1 = 0 \Rightarrow \frac{2 \pm \sqrt{4+4}}{2} \Rightarrow \begin{cases} x = 1 + \sqrt{2} \\ x = 1 - \sqrt{2} \end{cases}$

ب) $x^2 + x - 4 = 0 \Rightarrow \frac{-1 \pm \sqrt{1+16}}{2} \Rightarrow \begin{cases} x = \frac{-1 + \sqrt{17}}{2} \\ x = \frac{-1 - \sqrt{17}}{2} \end{cases}$

$$\text{الف) } 2x^2 - 11x + 18 = 0 \Rightarrow x^2 - 5x + 9 = 0 \Rightarrow x(x-5) - 5(x-5) = 0$$

$$\Rightarrow (x-5)(x-5) = 0 \Rightarrow x-5=0 \Rightarrow x=5$$

$$\Rightarrow x-5=0 \Rightarrow x=5$$

$$\text{ب) } x^2 + 3x - 18 = 0 \Rightarrow x^2 + 7x - 5x - 18 = 0 \Rightarrow x(x+7) - 5(x+7) = 0$$

$$\Rightarrow (x-5)(x+7) = 0 \Rightarrow x-5=0 \Rightarrow x=5$$

$$\Rightarrow x+7=0 \Rightarrow x=-7$$

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

$$\Rightarrow \Rightarrow x = \frac{7}{5}$$

$$\Rightarrow x = 1$$

$$\text{ب) } 3x^2 - 10x + 7 = 0 \Rightarrow x^2 - 10x + 21 \Rightarrow (x-3)(x-7) = 0 \Rightarrow x = 1$$

$$\Rightarrow x = \frac{7}{3}$$

$$2x^2 - \Delta x + 3 = 0 \Rightarrow \frac{\Delta \pm \sqrt{1}}{4} = \begin{matrix} \rightarrow 1 \\ \rightarrow \frac{1}{4} \end{matrix}$$

$$2x^2 + \Delta x + 3 = 0 \Rightarrow \frac{-\Delta \pm \sqrt{1}}{4} = \begin{matrix} \rightarrow -1 \\ \rightarrow -\frac{1}{4} \end{matrix}$$

$$2x^2 - \Delta x + 1 = 0 \Rightarrow \frac{\Delta \pm \sqrt{17}}{4} = \begin{matrix} \rightarrow \frac{\Delta + \sqrt{17}}{4} \\ \rightarrow \frac{\Delta - \sqrt{17}}{4} \end{matrix}$$

$$5x^2 + 7x + 9 = 0 \Rightarrow \Delta = \sqrt{49 - 180} \Rightarrow \Delta = \sqrt{-131} \Rightarrow \text{میں حالات دلتا منفی ہے جواب بنیاد}$$

$$S^2 - 2P = 9 + 5 = 14$$

$$S = 3 \quad \star$$

$$P = -2$$

$$S^2 - 3SP = 27 + 18 = 45$$

$$\binom{5}{\Delta} + \binom{9}{\gamma} = \frac{5!}{\Delta! 4!} + \frac{9!}{\gamma! 8!} = \frac{5 \cdot 4!}{24} + 3\gamma = 21 + 3\gamma = \underline{\underline{\Delta \gamma}}$$

$$\binom{9}{\gamma} - \binom{1}{\gamma} = \frac{9!}{\gamma! 8!} - \frac{1!}{\gamma! 0!} = \frac{5 \cdot 4!}{\gamma} - \frac{5\gamma}{\gamma} = 14 - 21 = \underline{\underline{\Delta \gamma}}$$