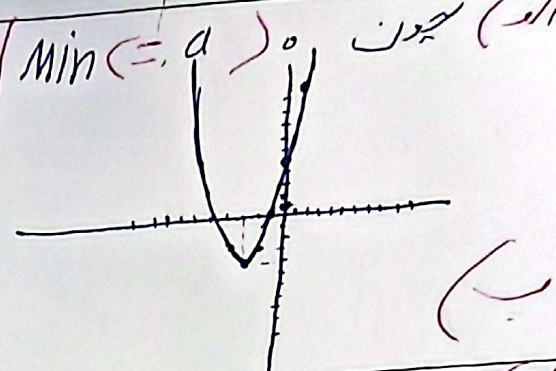


الف) چون $\min(-a)$

$$\min \left| \frac{-b}{2a} \right| \Rightarrow \frac{-b}{2a} = \frac{-3}{2} = -1.5$$

$$\min \left| \frac{-3}{2} \right| \Rightarrow -1.5$$

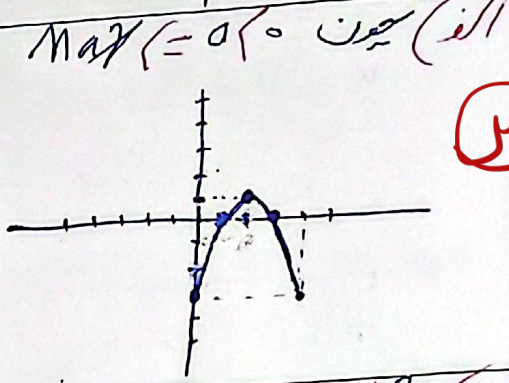


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الف) چون $\max(=0)$

$$\max \left| \frac{-b}{2a} \right| \Rightarrow \frac{-b}{2a} = \frac{-3}{2} = -1.5$$

$$\max \left| \frac{-3}{2} \right| \Rightarrow -1.5$$



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الف) $a < \frac{9}{1}$

$$\Delta = b^2 - 4ac = 9 - 4a > 0 \Rightarrow 9 - 4a > 0 \Rightarrow a < \frac{9}{4}$$

الف) $a = \frac{9}{4}$

$$\Delta = b^2 - 4ac = 9 - 4a = 0 \Rightarrow a = \frac{9}{4}$$

الف) $a > \frac{9}{4}$

$$\Delta = b^2 - 4ac = 9 - 4a < 0 \Rightarrow a > \frac{9}{4}$$

الف) $a \leq \frac{9}{4}$

$$\Delta = b^2 - 4ac = 9 - 4a \geq 0 \Rightarrow a \leq \frac{9}{4}$$

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

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

الف) $\Delta = b^2 - 4ac = 1 - 4 \cdot \frac{1}{4} \cdot (-1) = 2$

الف) $x = \frac{1 \pm \sqrt{2}}{2} = \frac{1 + \sqrt{2}}{2} \text{ or } \frac{1 - \sqrt{2}}{2}$

الف) $x = \frac{-1 \pm \sqrt{14}}{2} \text{ or } x = \frac{-1 - \sqrt{14}}{2}$

$$x^1 - 11x + 18 = 0 \Rightarrow x^1 - 11x + 18 = 0 \quad (x-1)(x-18) = 0$$

$$\Rightarrow \begin{cases} x = 1 \\ x = 18 \end{cases}$$

$$x^2 + 12x - 18 = 0 \Rightarrow (x+1)(x-18) = 0$$

$$\Rightarrow \begin{cases} x = -1 \\ x = 18 \end{cases}$$

$$2x^3 - 11x^2 + 17x = 0 \Rightarrow x^2 - 11x + 18 = 0 \Rightarrow (x-1)(x-18) = 0$$

$$\Rightarrow \begin{cases} x = \frac{a}{b} = 1 \\ x = \frac{a}{b} = \frac{18}{1} \end{cases}$$

$$x^3 - 10x^2 + 17x = 0 \Rightarrow x^2 - 10x + 17 = 0 \Rightarrow (x-1)(x-17) = 0$$

$$\Rightarrow \begin{cases} x = \frac{1}{2} \\ x = \frac{17}{2} \end{cases}$$

$$\text{if } a+b+c=0 \Rightarrow \begin{cases} x = \frac{1}{a} \\ x = \frac{b}{c} \end{cases}$$

$$\text{if } a+c=b \Rightarrow \begin{cases} x = -1 \\ x = \frac{b}{a} \end{cases}$$

$$\Delta = b^2 - 4ac = 144 - 11 \cdot 17 = -7 \Delta \quad x = \frac{-b \pm \sqrt{\Delta}}{2a} = \frac{11 \pm \sqrt{-7}}{2} \Rightarrow \begin{cases} x = \frac{11 + \sqrt{-7}}{2} \\ x = \frac{11 - \sqrt{-7}}{2} \end{cases}$$

$$\Delta = b^2 - 4ac = 144 - 11 \cdot 17 = -7 \Delta \quad x = \frac{-b \pm \sqrt{\Delta}}{2a} = \frac{11 \pm \sqrt{-7}}{2} \Rightarrow \begin{cases} x = \frac{11 + \sqrt{-7}}{2} \\ x = \frac{11 - \sqrt{-7}}{2} \end{cases}$$

$$S = \frac{-b}{a} = \frac{11}{1} = 11 \quad P = \frac{c}{a} = \frac{17}{1} = 17$$

$$x^3 - 11x^2 + 17x = 0 \Rightarrow x^2 - 11x + 17 = 0 \Rightarrow (x-1)(x-17) = 0$$

$$\binom{n}{k} = \frac{n!}{k!(n-k)!} = \frac{n!}{k!(n-k)!} = \frac{n!}{k!(n-k)!}$$

$$\Rightarrow 11 + 17 = 28$$

$$\frac{q!}{1!(1-1)!} = 1! \quad \left| \quad \frac{1!}{1!(1-1)!} = 1! = 1 \right|$$