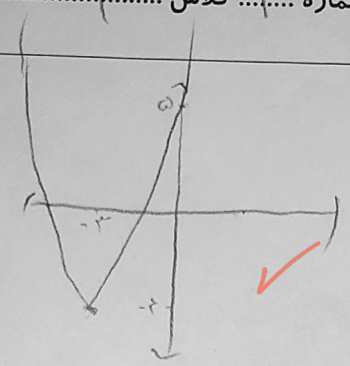
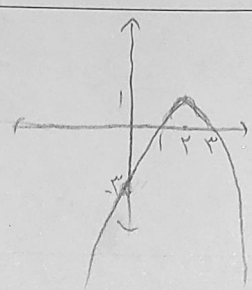




الف) $\frac{-3}{2} \rightarrow \frac{-4}{1} = -4$ Min (ب)

$-x^2 + 4x - 3 = 0 \quad (1, 0) \text{ و } (3, 0)$
 $\Rightarrow (x^2 - 4x + 3) = 0$
 $\Rightarrow (x-1)(x-3) = 0$
 $\Rightarrow x = 1, 3$



الف) Max 1

$\frac{3 \pm \sqrt{9-4a}}{4}$

$\Delta = 9 - 4a > 0 \Rightarrow a < \frac{9}{4}$ (الف)
 if $a = \frac{9}{4} \Rightarrow \Delta = 0 \Rightarrow x = \frac{3}{2} \Rightarrow a = \frac{9}{4}$ (ب)
 if $a > \frac{9}{4} \Rightarrow \Delta < 0 \Rightarrow$ متقعر $\Rightarrow \Delta < 0 \Rightarrow$ جواب ندارد (ج)
 $\Delta \geq 0 \Rightarrow a \leq \frac{9}{4}$ (د)

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

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

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

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

الف) $x^2 - 11x + 28 = (x-4)(x-7) = 0 \Rightarrow x=4, x=7$ ✓

ب) $x^2 + 3x - 28 = (x-4)(x+7) = 0 \Rightarrow x=4, x=-7$ ✓

الف) $5x^2 - 12x + 7 \rightarrow x^2 - 12x + 35 = (x-5)(x-7) \Rightarrow x = \frac{5}{5} = 1, x = \frac{7}{5}$ ✓

ب) $3x^2 - 10x + 7 \rightarrow x^2 - 10x + 21 = (x-3)(x-7) \Rightarrow x = \frac{3}{3} = 1, x = \frac{7}{3}$ ✓

الف) $2x^2 - 5x + 3 \rightarrow a+b+c \leq 6 \Rightarrow x=1, x=\frac{3}{2}$ ✓

ب) $2x^2 + 5x + 3 \rightarrow a+c \leq b \Rightarrow x \leq -1, x = -\frac{3}{2}$ ✓

ج) $2x^2 - 5x + 1 \rightarrow \frac{5 \pm \sqrt{25-8}}{4} = \frac{5 \pm \sqrt{17}}{4} = x$ ✓

د) $4x^2 + 7x + 9 \rightarrow \frac{-7 \pm \sqrt{49-144}}{8} \Rightarrow \Delta \text{ سالب} \rightarrow \text{معادلتی حقیقی ندارد}$

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

الف) $9 - (-4) = 13$ ✓

ب) $27 - 3(-9) = 54$ ✓

الف) $\frac{1 \times 4}{1 \times 1} + \frac{9 \times 4}{1 \times 1} = 40$ ✓

ب) $\frac{3 \times 4}{1 \times 1} - \frac{4 \times 9}{1 \times 1} = -24$ ✓

$18 - 27 = 09$ ✓

2

2

2

2

1, 10