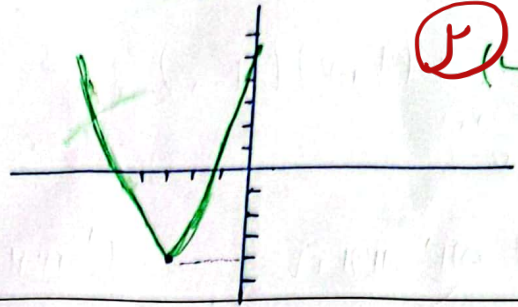


$$\left| \begin{array}{l} \frac{-b}{f_a} \Rightarrow \frac{-4}{2} = -2 \\ \frac{-\Delta}{f_a} \Rightarrow \frac{-(14-10)}{2} = \frac{-4}{2} = -2 \end{array} \right.$$

الف) ضریب مثبت است پس min دارد.

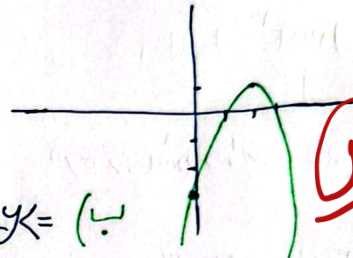


ب) ۲

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$$\left| \begin{array}{l} \frac{-b}{f_a} \Rightarrow \frac{-4}{-2} = 2 \\ \frac{-\Delta}{f_a} \Rightarrow \frac{-(14-12)}{-4} = \frac{-2}{-4} = 1 \end{array} \right.$$

الف) ضریب منفی است پس max دارد.



ب) ۲

۲

$$-x^2 + 4x - 3 = 0 \quad \Delta = 4 \quad \frac{-4 \pm \sqrt{4}}{-2} \Rightarrow x = 3 \quad \text{و} \quad x = 1$$

$$\Delta = b^2 - 4ac \Rightarrow 9 - 1a \Rightarrow a < \frac{9}{1} \quad a = \frac{1}{1} \leq \frac{1}{1}, \dots$$

الف) $\Delta > 0$

$$9 - 1a = 0 \Rightarrow a = \frac{9}{1}$$

ب) $\Delta = 0$

$$9 - 1a < 0 \Rightarrow a > \frac{9}{1}$$

ج) $\Delta < 0$

$$9 - 1a \geq 0 \Rightarrow a \leq \frac{9}{1}$$

د) $\Delta = 0, \Delta > 0$

۳

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

$$\Rightarrow x-1 = \pm \sqrt{2} \Rightarrow x = 1 \pm \sqrt{2} \Rightarrow x < 1 + \sqrt{2}$$

$$x^2 - x - 1 = 0 \Rightarrow x^2 - x + \frac{1}{4} - 1 - \frac{1}{4} = 0 \Rightarrow x^2 - x + \frac{1}{4} = 1 \frac{1}{4} \Rightarrow \left(x - \frac{1}{2}\right)^2 = \frac{5}{4}$$

$$\Rightarrow x - \frac{1}{2} = \pm \sqrt{\frac{5}{4}} \Rightarrow x = \frac{1}{2} \pm \frac{\sqrt{5}}{2}$$

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$$\Delta = 4 - (-4) = 8 \rightarrow \frac{2 + \sqrt{8}}{2} = \frac{2 + 2\sqrt{2}}{2} = 1 + \sqrt{2}$$

$$\frac{-b \pm \sqrt{\Delta}}{2a} \rightarrow \frac{2 - \sqrt{8}}{2} = \frac{2 - 2\sqrt{2}}{2} = 1 - \sqrt{2}$$

$$\Delta = 1 - (-14) = 15 \rightarrow \frac{-1 + \sqrt{15}}{2}$$

$$\frac{-1 - \sqrt{15}}{2}$$

۲

الف) $(x-7)(x-4) \rightarrow 4$
 $-11 = -7 - 4$
 $28 = -7 \times -4$

ج

ب) $(x+7)(x-4) \rightarrow -7$
 $-21 = -4 \times 7$
 $3 = 7 - 4$

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

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

$\frac{7}{5} = 1$
 $\frac{21}{3} = 1$
 $(x-7)(x-3)$

لنستمر دایماً بجمع ضرایب نیز منتهی شود و ضرایب $\frac{c}{a}$ بودند

الف) $2x^2 - 5x + 3 = 0$ جمع ضرایب منفرجه

$\frac{c}{a} = \frac{3}{2}$

ب) $2x^2 + 5x + 3 = 0$ مع $b=c, a$

-1
 $-\frac{c}{a} = -\frac{3}{2}$

ج) $\Delta = 25 - 12 = 13$
 $\frac{5 \pm \sqrt{13}}{2}$
 $\frac{5 \pm \sqrt{13}}{2}$

$\Delta = 49 - 144 = -$

کج جواب ندارد

$P = \frac{c}{a} = -2$ $S = \frac{-b}{a} = 3$

الف) $3^2 - (2 \times (-2)) = 13$

ب) $3^3 - (3 \times 3 \times (-2)) = 45$

الف) $\left| \frac{1 \times 2 \times 3 \times 4 \times 5 \times 6 \times 7}{1 \times 2 \times 3 \times 4 \times 5 \times 6 \times 7} \right| + \left(\frac{7 \times 1}{2} \right) = (3 \times 7) + (9 \times 2) = 27$

ب) $\left(\frac{9 \times 1 \times 7}{1 \times 2 \times 3} \right) - \left(\frac{7 \times 1}{2} \right) = 14 - 7 = 7$