

پایین صفحه حتماً مطالعه شود!!

الف) $x^2 - 4x + 8 = 1 \Rightarrow \frac{(x^2 - 4x + 4) - 1}{(x-2)^2} = 0 \Rightarrow \frac{(x-2)^2 - 1}{(x-2)^2} = 1$
 $\frac{(x-2)^2 - 1}{(x-2)^2} = 1 \Rightarrow (x-2)^2 - 1 = (x-2)^2$
 $\Rightarrow -1 = 0$ (Contradiction)

ب) $x^2 + 8x + 14 = 0 \Rightarrow (x^2 + 8x + 16) - 2 = 0 \Rightarrow (x+4)^2 - 2 = 0$
 $(x+4)^2 = 2 \Rightarrow x+4 = \pm\sqrt{2} \Rightarrow x = -4 \pm \sqrt{2}$

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الف) $x^2 - 4x + 8 = 0 \Rightarrow (x-2)(x-4) = 0 \Rightarrow x = 2 \text{ or } 4$

صورت سوال اشتباه دیدی

ب) $x^2 - 5x + 4 = 0 \Rightarrow (x-2)(x-3) = 0 \Rightarrow x = 2 \text{ or } 3$

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الف) $x^2 - 2x - 5 = 0$
 $a=1, b=-2, c=-5$

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ب) $2x^2 - 5x + \frac{1}{2} = 0$

Quadratic formula: $x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$
 $x = \frac{5 \pm \sqrt{25 - 4 \cdot 2 \cdot \frac{1}{2}}}{4} = \frac{5 \pm \sqrt{25 - 4}}{4} = \frac{5 \pm \sqrt{21}}{4}$

پایین صفحه بخون

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

ب) $4x^2 + x - 2 = 0$

Quadratic formula: $x = \frac{-1 \pm \sqrt{1 + 32}}{8} = \frac{-1 \pm \sqrt{33}}{8}$

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الف) $5x^2 - 12x + 7 = 0 \Rightarrow (5x-7)(x-1) = 0 \Rightarrow x = \frac{7}{5} \text{ or } 1$

ب) $2x^2 - 10x + 12 = 0 \Rightarrow x^2 - 5x + 6 = 0 \Rightarrow (x-2)(x-3) = 0 \Rightarrow x = 2 \text{ or } 3$

$(x-2)(x-3) = 0 \Rightarrow (x-1)(3x-7) = 0 \Rightarrow x = 1 \text{ or } \frac{7}{3}$

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$$\text{الف) } -2m^2 + 2m + 1 = 0$$

$$-2 \pm \sqrt{4 + 8} = \frac{m = \frac{-2 \pm \sqrt{12}}{-4}}{1} = \frac{-1 \pm \sqrt{3}}{2}$$

$$\Rightarrow 2m^2 - m + 1 = 0$$

$$\frac{1 \pm \sqrt{1 + 4}}{4} = 0 \quad \frac{1 + \sqrt{5}}{4} \quad \frac{1 - \sqrt{5}}{4}$$

$$\text{ج) } \frac{1 \pm \sqrt{1 + 4}}{4} = 0$$

$$\frac{1 \pm \sqrt{5}}{4} \Rightarrow m = \frac{1 + \sqrt{5}}{4} \quad \frac{1 - \sqrt{5}}{4}$$

$$\text{د) } \frac{1 \pm \sqrt{1 + 4}}{4} = 0$$

$$m = 1 \quad \frac{1 \pm \sqrt{5}}{4}$$

$$m^2 - 2m + 1 = 0 \quad (m-1)(m-1) = (2m-1)(m-1) \Rightarrow a < 1, 1/2$$

$$\Delta = 9 - 4a \quad 9 < 4a = \frac{9}{4} \quad a > \frac{9}{4} \Rightarrow a < 1, 1/2$$

$$\Delta = 9 - 4a$$

$$9 < 4a$$

$$a = 1, 1/2$$

$$a > 1, 1/2$$

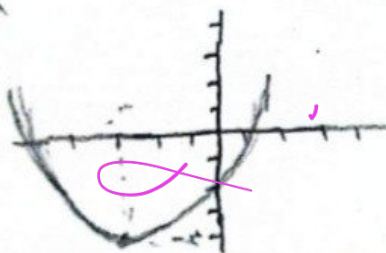
$$a \leq 1, 1/2$$

$$\min = \frac{b^2 - 4ac}{4a}$$

$$m = -\frac{b}{2a}$$

$$m = \frac{1}{2} \quad y = 9 - 11 + 2 = 0 \quad \min = \{0\}$$

$$\min (الف)$$



$$\{1\} \quad \{0\}$$

$$\{1\}$$

$$-\frac{b}{2a} > -\frac{1}{2} = 1 \quad -1 + 11 - 2 = 0 \quad \max = \{1\}$$

$$0 = -m^2 + 11m - 2 \quad m < 1$$



$$\{1\}$$

$$\{1\} \quad \{0\}$$

$$m^2 - 2m + 1 = 0 \quad S = 2 \quad P = -1$$

$$\text{الف) } 9 + 1 = 10$$

$$\Rightarrow -2\sqrt{11} + 11 = -9$$

$$(2)^2 - 2(2)(-1) = 10$$

۳- ب)

$$2x^2 - 4x + \frac{1}{2} = 0$$

$$\Delta = b^2 - 4ac \rightarrow (-2)^2 - 4\left(\frac{1}{2}\right) = 4 - 2 = 2$$

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

۴- اگر Δ باشد معادله دو ریشه دارد
" $\Delta = 0$ " یک ریشه دارد.
" $\Delta < 0$ " ریشه ندارد.

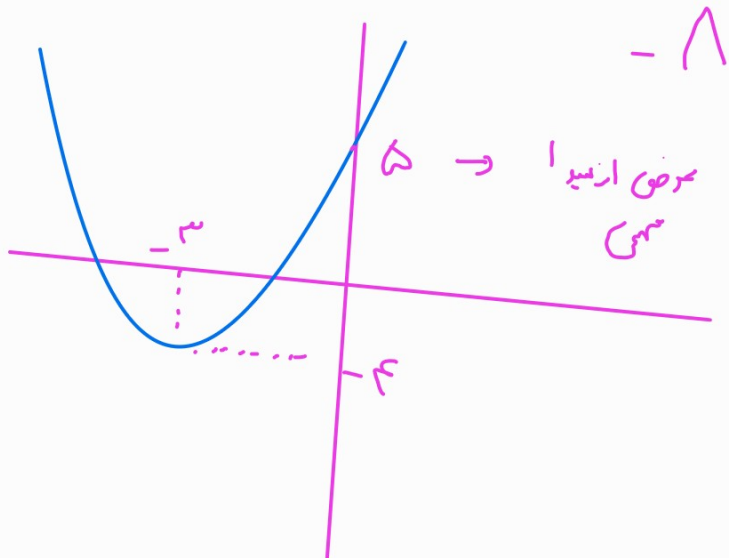
الف) $2x^2 + 6x - 1 = 0 \rightarrow \Delta = b^2 - 4ac \rightarrow (6)^2 - 4(-1)(2) = 36 + 8 = 44$ $\Delta > 0$ معادله دو ریشه دارد.

ب) $2x^2 - x + 2 = 0 \rightarrow \Delta = (-1)^2 - 4(2)(2) = 1 - 16 = -15$ $\Delta < 0$ معادله ریشه ندارد.

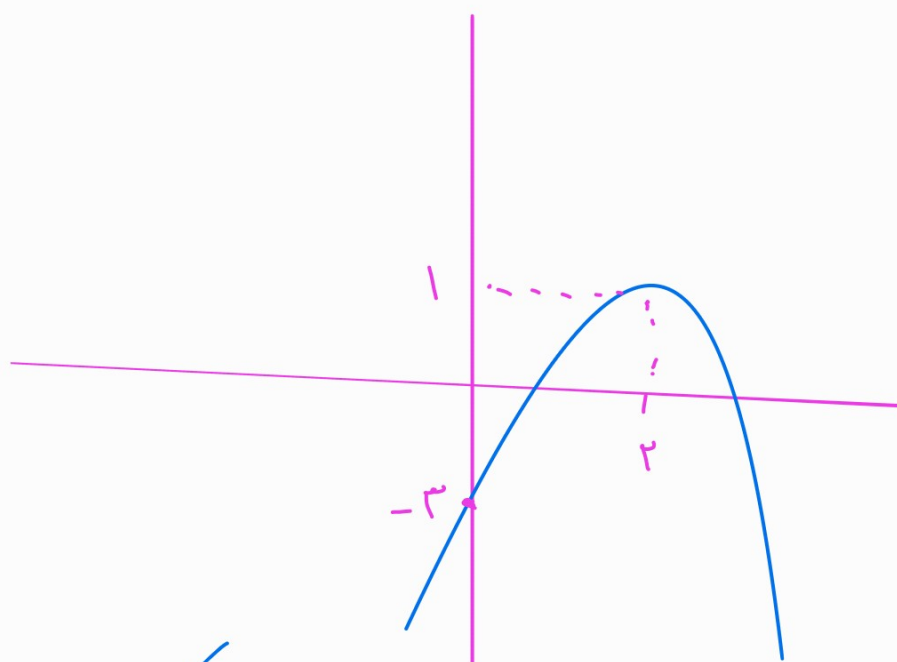
ج) $2x^2 - 4x + 2 = 0 \rightarrow \Delta = (-4)^2 - 4(2)(2) = 16 - 16 = 0$ $\Delta = 0$ معادله یک ریشه دارد.

د) $2x^2 - x + 1 = 0 \rightarrow \Delta = (-1)^2 - 4(1) = 1 - 4 = -3$ $\Delta < 0$ معادله ریشه ندارد.

$$a > 0 \rightarrow \min \quad \begin{cases} -3 \\ -4 \end{cases}$$



$$a < 0 \rightarrow \max \quad \begin{cases} 2 \\ 1 \end{cases}$$



محور x ها دو نقطه $x=1$ و $x=3$ قطع می کنند.