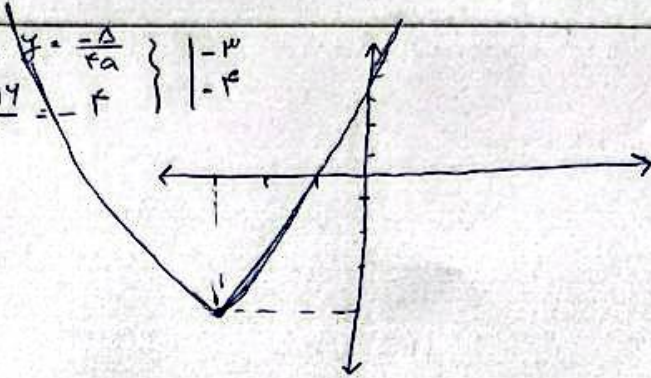


$$y = x^2 + 4x + 5 \rightarrow m = \frac{-b}{2a} = \frac{-4}{2} = -2, y = \frac{\Delta}{4a} = \frac{-4}{4} = -1$$

$$\Delta = b^2 - 4ac = 16 - 20 = -4$$

(نشیمن)



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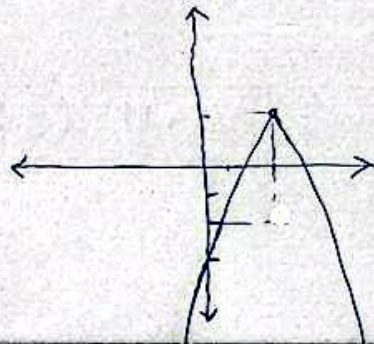
$$y = -x^2 + 4x - 3$$

$$\Delta = b^2 - 4ac = 16 - 12 = 4$$

$$m = \frac{-b}{2a} = \frac{-4}{-2} = 2$$

$$y = \frac{\Delta}{-4a} = \frac{4}{-4} = -1$$

(بالسیر)



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$$x^2 - 2x + a = 0, \Delta = b^2 - 4ac = 4 - 4a$$

الف) $4 - 4a > 0 \Rightarrow a < 1$

ب) $4 - 4a = 0 \Rightarrow a = 1$

ج) $4 - 4a < 0 \Rightarrow a > 1$

د) $4 - 4a > 0 \Rightarrow a < 1$

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$$x^2 - 2x - 1 + 2 - 2 = 0 \rightarrow (x-1)^2 - 2 = 0 \rightarrow (x-1)^2 = 2$$

$$(x-1) = \pm\sqrt{2} \rightarrow x = 1 \pm \sqrt{2}$$

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

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

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$$\Delta = b^2 - 4ac = 16 - 20 = -4$$

$$m = \frac{-b}{2a} = \frac{-4}{2} = -2$$

الف) $1 - 1(-1) = 1 \rightarrow \frac{1 \pm \sqrt{1}}{1} = \frac{1 \pm 1}{1} = 1 \pm 1 = x$

ب) $x^2 + x - 1 = 0, 1 - 1(-1) = 1 \rightarrow \frac{1 \pm \sqrt{1}}{1} = \frac{1 \pm 1}{1} = 1 \pm 1 = x$

$$\frac{-1 \pm \sqrt{1}}{1} = x$$

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$$\text{الف) } x^2 - 11x + 28 =$$

$$(x-4)(x-7) \rightarrow \boxed{x=4, 7}$$

$$\text{ب) } x^2 + 3x - 28 =$$

$$(x+7)(x-4) \rightarrow \boxed{x=-7, 4}$$

$$\text{الف) } x^2 - 12x + 35 = 0 \rightarrow x^2 - 12x + 35 = 0$$

$$(x-5)(x-7) \rightarrow x = \frac{5}{\Delta}, \frac{\Delta}{5} = \frac{5}{\Delta} \Rightarrow 1 = \frac{5}{\Delta} \Rightarrow \Delta = 5$$

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

$$\text{الف) } 2 + 3x - 5 = 0 \Rightarrow x = 1, \frac{2}{3} \Rightarrow \boxed{x = 1, \frac{2}{3}}$$

$$\text{ب) } 2 + 3x - 5 = 0 \Rightarrow x = -1, -\frac{2}{3} \Rightarrow \boxed{x = -1, -\frac{2}{3}}$$

$$\text{ج) } \Delta = b^2 - 4ac = 25 - 12 = 13$$

$$\boxed{x = \frac{5 \pm \sqrt{13}}{3}}$$

$$\text{د) } \Delta < 0, \Delta = 49 - 144 \leftarrow \text{جواب ندارد زیرا}$$

$$\text{الف) } \begin{matrix} \text{جمع} \\ \frac{3}{x} + \frac{2}{-x} \end{matrix} = \frac{-b}{a} \quad \begin{matrix} \text{فر} \\ \frac{2}{-x} + \frac{3}{x} \end{matrix} = \frac{c}{a} \quad x^2 - 3x - 2 = 0$$

$$\text{الف) } \rightarrow x^2 - 3(-2) = 9 + 6 = 15 \Rightarrow \boxed{15}$$

$$\text{ب) } \rightarrow x^2 - 3(2)(-2) = 24 + 12 = 36 \Rightarrow \boxed{36}$$

$$\text{الف) } \begin{pmatrix} 5 \\ 2 \end{pmatrix} + \begin{pmatrix} 9 \\ 2 \end{pmatrix} = \frac{5 \times 9}{2} + \frac{9 \times 4}{2} = 21 + 18 = 39 \Rightarrow \boxed{39}$$

$$\text{ب) } \begin{pmatrix} 9 \\ 2 \end{pmatrix} \cdot \begin{pmatrix} 1 \\ 2 \end{pmatrix} = \frac{9 \times 1}{2 \times 2} = \frac{9}{4}, \frac{1 \times 9}{2} = \frac{9}{2}$$

$$18 - 9 = 9 \Rightarrow \boxed{9}$$