

الف) $x^2 - 4x + 4 = 0 + 1 \Rightarrow x^2 - 4x + 9 = 0$
 $(x-2)^2 = 1 \sim (x-2)^2 - 1 = 0 \Rightarrow x = 3$
 $x = 1$

ب) $x^2 + 11x + 10 = 0 + 9 \Rightarrow x^2 + 11x + 19 = 9$
 $(x+5)^2 = 9 \Rightarrow x = -1$
 $x = -9$

الف) $x^2 - 5x + 4 = 0 \sim (x-1)(x-4) = 0 \sim x = +1, +4$

ب) $x^2 - 5x - 14 = 0 \sim (x-7)(x+2) = 0 \sim x = +7, -2$

الف) $x^2 - 3x - 4 = 0 \sim x = \frac{3 \pm \sqrt{9 - (-12)}}{2} = \frac{3 + \sqrt{21}}{2}, \frac{3 - \sqrt{21}}{2}$

ب) $2x^2 - 4x + \frac{1}{2} = 0 \sim x = \frac{4 \pm \sqrt{16 - (2)(\frac{1}{2})}}{4} = \frac{4 + \sqrt{15}}{4}, \frac{4 - \sqrt{15}}{4}$

الف) $x^2 - 3x + 2 = 0$
 $\downarrow \quad \downarrow$
 $-(-3) \quad \rightarrow \quad x = 1, 2$
 $\downarrow \quad \downarrow$
 $+2 \quad +1$

ب) $x^2 + x - 12 = 0 \sim x = \frac{-1 \pm \sqrt{1 + 48}}{2} = \frac{-1 + 7}{2}, \frac{-1 - 7}{2}$
 $x = 3, -4$

الف) $\Delta = 4 - 12 = -8 \rightarrow$ ریشه های
 $\Delta = 1 - 14 = -13 \rightarrow$ ریشه های
 $\Delta = 14 - 1 = 13 \rightarrow$ ریشه های

ب) $\Delta = 1 - 4 = -3 \rightarrow$ ریشه های
 $\Delta = 1 - 4 = -3 \rightarrow$ ریشه های

$$\Delta = \sqrt{9-4a} \rightarrow [1, +\infty) \text{ مجاز} \Rightarrow \boxed{a=1}$$

$$\rightarrow \Delta = \sqrt{9-4a} \sim a = \frac{9}{4}$$

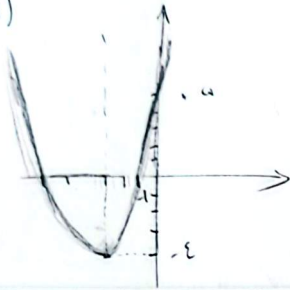
$$\rightarrow \Delta = \sqrt{9-4a} \sim [2, +\infty) \text{ مجاز} \Rightarrow \boxed{a=2}$$

$$\rightarrow \boxed{a=-1}$$

$$f(x) = x^2 + 4x + 5 \quad a(1)$$

$$x = \frac{-b}{2a} = \frac{-4}{2} = -2 \quad \text{الف}$$

الف)



$$y = -1$$

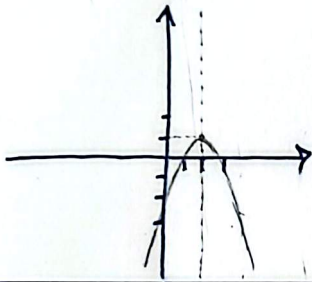
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$$x^2 + 4x + 5 \rightarrow \boxed{x = -5, -1}$$

$$y = -x^2 + 6x - 3 \quad a(-)$$

$$x = \frac{-b}{2a} = \frac{-6}{-2} = 3$$

$$y = 1$$



$$-x^2 + 6x - 3 \Rightarrow x^2 + 6x + 3 \rightarrow \boxed{x = 3, 1}$$

$$x^2 - 3x - 2 = 0$$

$$p = \frac{c}{a} = \frac{-2}{1} = -2 \quad / \quad s = \frac{-b}{a} = \frac{3}{1} = 3$$

$$\text{الف)} \quad s^2 - 2p = 9 + 4 = \boxed{13}$$

$$\text{ب)} \quad s^2 - 3s = 9 + 11 = \boxed{20}$$

رابطه های معادله های زیر را به روش نیوکساید بنویسید.

$$\text{الف)} \quad x^2 - 12x + 11 = 0 \rightarrow x^2 - 12x + 36 = 0 \rightarrow x = \frac{11}{6} \text{ و } \frac{5}{6}$$

$$\text{ب)} \quad x^2 - 10x + 21 = 0 \rightarrow x^2 - 10x + 25 = 0 \rightarrow x = \frac{11}{3} \text{ و } \frac{1}{3}$$