

$$الف) u^2 - 11u + 28 = 0$$

$$(u - 4)(u - 7) = 0$$

$$u - 4 = 0 \rightarrow u = 4$$

$$u - 7 = 0 \rightarrow u = 7$$

$$ب) u^2 + 3u - 28 = 0$$

$$(u - 4)(u + 7) = 0$$

$$u - 4 = 0 \rightarrow u = 4$$

$$u + 7 = 0 \rightarrow u = -7$$

$$الف) 5u^2 - 12u + 8 = 0$$

$$\alpha$$

$$u^2 - 12u + 16 = 0$$

$$(u - 4)(u - 4) = 0$$

$$u = \frac{12 \pm \sqrt{144 - 64}}{2} = \frac{12 \pm 10}{2} = 1, 11$$

$$u \rightarrow v$$

$$ب) 3u^2 - 10u + 8 = 0$$

$$\alpha$$

$$u^2 - 10u + 24 = 0$$

$$(u - 4)(u - 6) = 0$$

$$u = \frac{10 \pm \sqrt{100 - 96}}{2} = \frac{10 \pm 2}{2} = 4, 6$$

$$الف) 2u^2 - 5u + 3 = 0$$

$$2 + 2 - 5 = 0 \rightarrow 1, \frac{3}{2}$$

$$ب) 2u^2 + 5u + 3 = 0$$

$$3 + 2 = 5 \rightarrow -1, -\frac{3}{2}$$

$$ج) 2u^2 - 5u + 1 = 0$$

$$\Delta = b^2 - 4ac = 25 - 8 = 17$$

$$د) 4u^2 + 6u + 9 = 0$$

$$\Delta < 0 \rightarrow \text{مقبول نیست}$$

$$u^2 - 3u - 2 = 0$$

$$3 = \frac{3}{1} = -\frac{(-3)}{1} \cdot \frac{b}{a} = 3 = \text{جمع شده}$$

$$الف) s^2 - 2p$$

$$-2 = -\frac{2}{1} \quad \frac{c}{a} = p = \text{ضرب شده}$$

$$9 - 2(-2) = 13$$

$$ب) s^2 - 3ps$$

$$2v - 3(-2)(3) = 40$$

$$الف) \binom{v}{5} + \binom{9}{2} = \frac{v!}{0! \times 2!} + \frac{9!}{8! \times 1!} = \frac{v \times 4 \times 3!}{2! \times 2!} + \frac{9 \times 8 \times 7!}{2! \times 7!}$$

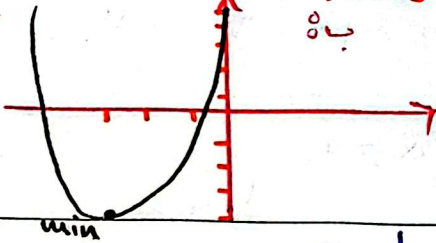
$$21 + 36 = 57$$

$$ب) \binom{9}{3} - \binom{1}{2} = \frac{9!}{3! \times 4!} - \frac{1!}{1! \times 0!} = \frac{9 \times 8 \times 7 \times 6 \times 5 \times 4 \times 3 \times 2 \times 1}{6 \times 24} - 1 = 105 - 1 = 104$$

$$11 - 21 = -10$$

$$y = x^2 + 4x + 5$$

نوع $a > 0$ راست ب min بسر



$$\text{ent} / \frac{-b}{2a} \quad \frac{b=4}{a=1} \rightarrow \frac{-4}{2} = -2$$

خاندی یا $\frac{-D}{2a}$

$$y = (-2)^2 + 4(-2) + 5$$

$$y = 4 - 8 + 5 = -4$$

$$y = -(x)^2 + 1 - 3 \quad \text{ent} = \frac{-b}{2a} \rightarrow \frac{-1}{-2} = \frac{1}{2} \quad y = -x^2 + 4x - 3$$

$$y = -4 + 1 - 3 = 1$$

$$\text{ent} = \frac{1}{1}$$



ب) محور را قطع می کند $y = 0$

$$-x^2 + 4x - 3 = 0 \quad -3 + (-1) + 4 = 0$$

$$x_1 \rightarrow 1 \quad x_2 \rightarrow 3$$

$$2x^2 - 3x + a = 0 \quad \Delta = (-3)^2 - 4ac \quad \Delta > 0 \quad \text{الف} = \text{دو جواب متمایز حقیقی}$$

$$\Delta = b^2 - 4ac \geq 0 \rightarrow 9 - 12a \geq 0 \quad 9 \geq 12a \quad a \leq \frac{3}{4}$$

$$\Delta = b^2 - 4ac < 0 \rightarrow 9 - 12a < 0 \quad 9 < 12a \quad a > \frac{3}{4}$$

$$\Delta = b^2 - 4ac \geq 0 \quad 9 - 12a \geq 0 \quad a \leq \frac{3}{4}$$

$$\Delta \geq 0 \quad \text{ریشه داشته باشد} \quad \text{ب}$$

$$x^2 - 2x - 1 = 0 \quad \Delta = 4 + 4 = 8 \quad x = \frac{2 \pm \sqrt{8}}{2} = 1 \pm \sqrt{2}$$

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

$$x^2 - x - 1 = 0 \quad \Delta = 1 + 4 = 5 \quad x = \frac{1 \pm \sqrt{5}}{2}$$

$$x^2 - x + \frac{1}{4} = \frac{5}{4} \quad x - \frac{1}{2} = \pm \frac{\sqrt{5}}{2} \quad x = \frac{1 \pm \sqrt{5}}{2}$$

$$x^2 - 2x - 1 = 0 \quad \Delta = 4 + 4 = 8 \quad x = \frac{2 \pm \sqrt{8}}{2} = 1 \pm \sqrt{2}$$

$$x^2 + x - 4 = 0 \quad \Delta = 1 + 16 = 17 \quad x = \frac{-1 \pm \sqrt{17}}{2}$$

$$x^2 - 2x - 1 = 0 \quad \Delta = 4 + 4 = 8 \quad x = \frac{2 \pm \sqrt{8}}{2} = 1 \pm \sqrt{2}$$

$$x^2 + x - 4 = 0 \quad \Delta = 1 + 16 = 17 \quad x = \frac{-1 \pm \sqrt{17}}{2}$$

$$x^2 - 2x - 1 = 0 \quad \Delta = 4 + 4 = 8 \quad x = \frac{2 \pm \sqrt{8}}{2} = 1 \pm \sqrt{2}$$

$$x^2 + x - 4 = 0 \quad \Delta = 1 + 16 = 17 \quad x = \frac{-1 \pm \sqrt{17}}{2}$$

$$x^2 - 2x - 1 = 0 \quad \Delta = 4 + 4 = 8 \quad x = \frac{2 \pm \sqrt{8}}{2} = 1 \pm \sqrt{2}$$

$$x^2 + x - 4 = 0 \quad \Delta = 1 + 16 = 17 \quad x = \frac{-1 \pm \sqrt{17}}{2}$$