

$$\lambda^2 + 11\lambda + 28 = 0$$

$$(\lambda - \mu)(\lambda - \nu) = 0$$

$$\lambda = \cancel{450} \text{ nm}$$

الف

②

$$\lambda^2 + 5\lambda - 2\lambda = 0$$

$$(x - f)(x + v) = 0 \rightarrow \begin{cases} x = f \\ x = -v \end{cases}$$

$$\omega \mathbf{x}^T - \mathbf{I} \mathbf{x} + \mathbf{v} = 0$$

$$\partial^2 - V\lambda + \gamma\omega = 0$$

$$(x - \omega)(x - \nu)$$

$$\Rightarrow \rightarrow \boxed{\frac{v}{a}}$$

$$\vec{a} = \left(\frac{3}{3} = 1 \right)$$

الف

②

$$3\lambda^2 - 1\lambda + 4 = 0$$

$$(x-4)(x-5)$$

$$x^2 - 1.2x + 1 = 0$$

$$x = \frac{1}{\sqrt{2}}$$

$$\boxed{\lambda = \frac{1}{2}}$$

الف) $2x^2 - 5x + 3 = 0$

$$\boxed{x=1}$$

$$\alpha = \frac{\alpha_r}{\alpha_r} = 1/\omega$$

$$c) \quad r\lambda' + \omega\lambda + r\zeta = 0$$

$$a + c = b$$

$$\boxed{\lambda = -1}$$

$$\alpha = -\frac{\epsilon}{\alpha_r} = -1,5$$

8) $x^2 - 5x + 1 = 0$

$$\Delta = b^r - r a c$$

$$V_D - V = 1V$$

$$\frac{\omega \pm \sqrt{14}}{K}$$

$$\frac{-b \pm \sqrt{\Delta}}{2a}$$

$$\Rightarrow f\lambda^2 + v\lambda + a = 0$$

$$\Delta = b^r - r_a C$$

$$19 - 133 \rightarrow 4$$

این مقادیر جواب ندارد یعنی این را در کتاب تصحیف مذکور است ۵۴۰

$$\lambda^2 - 4\lambda - 1 = 0$$

$$s = -\frac{b}{a}$$

$$P = \frac{C}{a}$$

$$\text{wii) } S^Y - r_p = 9 - r\left(\frac{-r}{1}\right) = 9 + r = 12$$

$$S = -\frac{b}{a} = r \quad p = -r$$

$$c) S^R - rSp = rV + 1A = F \quad \checkmark$$

الف) $\binom{n}{r} + \binom{n}{r+1} = \binom{n}{r} + \binom{n}{r} = 2\binom{n}{r}$

ب) $\binom{n}{r} - \binom{n}{r+1} = \frac{n!}{r!(n-r)!} - \frac{n!}{(r+1)!(n-r-1)!} = \frac{n!}{r!(n-r)!} \left(1 - \frac{n-r}{r+1}\right) = \frac{n!}{r!(n-r)!} \left(\frac{r+1-n+r}{r+1}\right) = \frac{n!}{r!(n-r)!} \left(\frac{2r+1-n}{r+1}\right)$

VAYANAN

VT

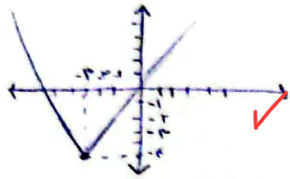
$$\frac{1 \text{ V } \cdot \text{Y}}{\text{V}}$$

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

$$\text{ext} \begin{cases} x = -\frac{b}{2a} & x = -2 \\ y = -\frac{\Delta}{4a} & y = -1 \end{cases} \quad 15 = 4 \min$$

$$y = 9 + -11 + 5 = -1$$

الف) 2

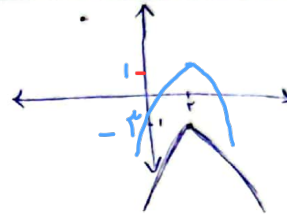


ب) 1

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

$$\text{ext} \begin{cases} x = -\frac{b}{2a} = \frac{4}{-2} = -2 \\ y = -\frac{\Delta}{4a} = 1 \end{cases} \quad \checkmark$$

$$\text{max} \quad y = -x^2 + 4x - 3 = 1$$



الف) 1, 5

2

ب) 1

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

$$0 = -(x-1)(x-3)$$

$$a+b = -4 \quad ab = 3$$

$$\boxed{x=1, x=3}$$

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

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

$$9 - 12a \geq 0$$

$$a \geq \frac{3}{4} \quad \checkmark$$

$$\Delta > 0$$

الف) 2

$$9 - 12a$$

$$9 - 12a \leq 0$$

ب) $\Delta = 0$

$$9 - 12a = 0 \Rightarrow a = \frac{3}{4} \quad \checkmark$$

ج) $\Delta < 0$

3

$$9 - 12a < 0$$

$$-12a < -9$$

$$12a < 9$$

$$a < \frac{3}{4} \quad \checkmark$$

$$9 - 12a > 0$$

$$12a > 9$$

$$a > \frac{3}{4} \quad \checkmark$$

د) $\Delta > 0$

$$x^2 - 2x - 1 = 0$$

$$x^2 - 2x - 1 + 2 = 2$$

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

$$x-1 = \pm \sqrt{2}$$

$$x = 1 + \sqrt{2}$$

$$x = 1 - \sqrt{2} \quad \checkmark$$

الف) 2

4

$$x^2 - x - 1 = 0$$

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

$$(x - \frac{1}{2})^2 = \frac{5}{4}$$

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

$$x = \frac{1 + \sqrt{5}}{2}$$

$$x = \frac{1 - \sqrt{5}}{2} \quad \checkmark$$

ب) 2

$$\text{الف) } x^2 - 2x - 1 = 0$$

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

$$\Delta = 4 + 4 = 8$$

$$x = \frac{2 \pm \sqrt{8}}{2} = 1 \pm \sqrt{2}$$

$$x = 1 \pm \sqrt{2}$$

$$\boxed{x = 1 \pm \sqrt{2}}$$

الف) 2

5

$$\text{ب) } x^2 + x - 4$$

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

$$-4 \times 1 \times -4 = 16 \quad \sqrt{\Delta} = 4$$

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

$$\boxed{x = \frac{-1 \pm 4}{2}}$$