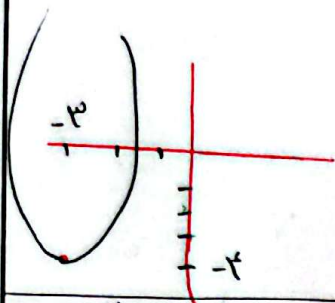


نام و نام خانوادگی رتبه کلاس شماره تکلیف شماره

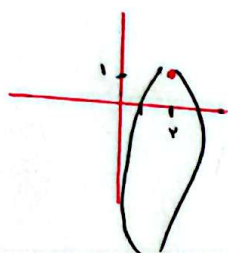
$$y = x^2 + 2x + 5 \quad \text{ext} \quad \begin{cases} -\frac{b}{2a} = -\frac{2}{2} = -1 \\ \frac{-\Delta}{4a} = \frac{-4+16}{4} = 3 \end{cases}$$



الف:

ب:

$$y = -x^2 + 2x - 3 \quad \text{ext} \quad \begin{cases} -\frac{b}{2a} = \frac{-2}{-2} = 1 \\ \frac{-\Delta}{4a} = \frac{-4-12}{-4} = 1 \end{cases}$$



الف:

ب: ریشه یابی روش جمع ضرایب

$$\begin{aligned} x &= 1 \\ x &= \frac{c}{a} = 3 \end{aligned}$$

الف) $\Delta > 0 \Rightarrow \Delta = b^2 - 4ac \Rightarrow -4 - 4a > 0 \Rightarrow 9 + 11a > 0 \Rightarrow 9 > -11a$

$\frac{9}{11} > a = \boxed{a < \frac{9}{11}}$ ب) $\Delta = 0 \Rightarrow \Delta = 0 \Rightarrow 9 + 11a = 0 \Rightarrow 9 = -11a \Rightarrow 3$

$a = -\frac{9}{11}$ ج) $\Delta < 0 \Rightarrow 9 + 11a < 0 \Rightarrow 9 < -11a \Rightarrow -\frac{9}{11} < a \Rightarrow a > -\frac{9}{11}$

$\Delta \geq 0 \Rightarrow 9 + 11a \geq 0 \Rightarrow 9 \geq -11a \Rightarrow \frac{9}{11} \geq a$

الف: $x^2 - 2x - 1 = 0 \Rightarrow x^2 - 2x = 1 \Rightarrow x^2 - 2x + \left(\frac{-2}{2}\right)^2 = 1 + (-1)^2 = 2 \Rightarrow (x-1)^2 = 2$
 $x = 1 + \sqrt{2} \quad x = 1 - \sqrt{2}$

ب: $x^2 - x - 1 = 0 \Rightarrow x^2 - x = 1 \Rightarrow x^2 - x + \left(\frac{-1}{2}\right)^2 = 1 + \left(\frac{1}{4}\right) \Rightarrow x^2 - x + \frac{1}{4} = \frac{5}{4}$

$\left(x - \frac{1}{2}\right)^2 = \frac{5}{4} \Rightarrow x - \frac{1}{2} = \pm \sqrt{\frac{5}{4}} \Rightarrow x = \frac{1 + \sqrt{5}}{2} \quad x = \frac{1 - \sqrt{5}}{2}$

الف) $x^2 - 2x - 1 = 0 \Rightarrow \Delta = b^2 - 4ac = +4 + 4 = 8 \Rightarrow x = \frac{-b \pm \sqrt{\Delta}}{2a} = \frac{2 \pm \sqrt{8}}{2} = 1 \pm \sqrt{2}$

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

ب) $x^2 - x - 2 = 0 \Rightarrow \Delta = b^2 - 4ac = 1 + 8 = 9 \Rightarrow x = \frac{-b \pm \sqrt{\Delta}}{2a} = \frac{1 \pm 3}{2}$

$\frac{-1 \pm \sqrt{9}}{2} = \frac{-1 \pm 3}{2}$

$$x^2 - 11x + 21 = 0 \Rightarrow (x-4)(x-7) \Rightarrow x=4 \quad x=7$$

الف:

$$x + 3x - 41 = 0 \Rightarrow (x-4)(x+7) \Rightarrow x=4 \quad x=-7$$

ب:

$$\omega x^2 - 12x + 7 = 0 \Rightarrow x^2 - 12x + 7\omega = (x-7)(x-\omega) \Rightarrow \begin{matrix} x=7 \\ x=\omega \end{matrix} \Rightarrow \begin{matrix} x=\frac{7}{\omega} \\ x=\frac{\omega}{\omega}=1 \end{matrix}$$

الف:

$$3x^2 - 10x + 7 = 0 \Rightarrow x^2 - 10x + 71 = (x-7)(x-4) \Rightarrow \begin{matrix} x=7 \\ x=4 \end{matrix} \Rightarrow \begin{matrix} x=\frac{7}{4} \\ x=\frac{4}{7}=1 \end{matrix}$$

ب:

الف) $2x^2 - \omega + 3 = 0 \quad x=1$
 $x = \frac{c}{a} = \frac{3}{2}$

ب) $3x^2 + \omega x + 12 = 0 \Rightarrow x^2 + \omega x + 4 = 0 \Rightarrow (x+3)(x+1) \quad \begin{matrix} x=-3 \Rightarrow x=-1 \\ x=-1 \Rightarrow x=-\frac{3}{2} \end{matrix}$

ج) $2x^2 - \omega x + 1 = 0 \Rightarrow 2\omega - 1 = 12 \quad x = \frac{-b \pm \sqrt{\Delta}}{2a} \Rightarrow \frac{\omega \pm \sqrt{14}}{2} =$

د) $4x^2 + 7x + 9 = 0 \Rightarrow 4 - 12 = -9\omega \quad x = \frac{-7 \pm \sqrt{49}}{8} =$

$$x^2 - 3x - 2 = 0 \Rightarrow 9 - 1 = 12 = x = \frac{-b \pm \sqrt{\Delta}}{2a} \Rightarrow \frac{3 \pm \sqrt{17}}{2} \quad \begin{matrix} x=2 \\ x=1 \end{matrix}$$

$s = 1+2=3$
 $p = 1 \times 2 = 2$

الف) $9 - 4 = \omega$

ب) $27 - 11 = 9$

الف) $\binom{7}{\omega} + \binom{9}{\mu} = \frac{7!}{(\omega!)x\omega!} = 21 + \frac{9!}{(\mu!)x\mu!} = 12 \Rightarrow 12\mu + 11 = \omega 7$

ب) $\binom{9}{\mu} - \binom{1}{\nu} = \frac{9!}{(\mu!)x\mu!} = 12 - \frac{1!}{(\nu!)x\nu!} = 12 - 11 = \omega 7$