

الف) $x^2 - 4x + 8 = 0$

$x^2 - 4x + 9 = 1$

$(x-2)^2 = 1$

$x-2 = \pm 1 \Rightarrow \begin{cases} x=3 \\ x=1 \end{cases}$

ب) $x^2 + 8x + 7 = 0$

$x^2 + 8x + 14 = 9$

$(x+4)^2 = 9$

$x+4 = \pm 3 \Rightarrow \begin{cases} x=-7 \\ x=-1 \end{cases}$

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الف) $x^2 - 6x + 4 = 0$

$x=2 \quad x=4$

ب) $x^2 - 6x - 14 = 0$

$x=7 \quad x=-2$

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الف) $x^2 - 2x - 5 = 0$

$x = \frac{2 \pm \sqrt{29}}{2}$

$x = \frac{2 - \sqrt{29}}{2}$

$x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$

ب) $2x^2 - 4x + 1 = 0$

$x = \frac{1 \pm \sqrt{12}}{2}$

$x = \frac{1 - \sqrt{12}}{2}$

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الف) $x^2 - 2x + 2 = 0$

$x=1 \quad x=2$

ب) $2x^2 + x - 2 = 0$

$x^2 + x - 12 = 0$

$x = \frac{1 \pm \sqrt{49}}{2} \Rightarrow \begin{cases} x=3 \\ x=-4 \end{cases}$

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الف) $5x^2 - 12x + 7 = 0$

$x^2 - 12x + 28 = 0$

$\frac{v}{5} = \frac{v}{5}$

$x = \frac{v}{5} \quad x=1$

$\frac{v}{5} = 1$

ب) $2x^2 - 10x + 7 = 0$

$x^2 - 10x + 21 = 0$

$\frac{r}{r} = 1$

$\frac{v}{r} = \frac{v}{r}$

$x=1 \quad x = \frac{v}{r}$

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الف) $-2x^2 + 5x - 1 = 0$

$\sqrt{b^2 - 4ac} \rightarrow 25 - 12 = 13 \Rightarrow$ ریشه حقیقی ندارد

ب) $2x^2 - x + 2 = 0$

$\sqrt{b^2 - 4ac} \rightarrow 1 - 16 = -15 \Rightarrow$ ریشه حقیقی ندارد

ب) $2x^2 - x + 1 = 0$

$\sqrt{b^2 - 4ac} \rightarrow 1 - 8 = -7 \Rightarrow$ ریشه حقیقی ندارد

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ب) $2x^2 - 4x + 2 = 0$

$\sqrt{b^2 - 4ac} \rightarrow 16 - 16 = 0 \Rightarrow$ ریشه مضاعف

$$r_m^r - r_m + a = 0$$

$$\sqrt{b^2 - 4ac}$$

$$\begin{aligned} \Delta &\geq 0 \\ q - \lambda a &\geq 0 \\ q &\geq \frac{\lambda a}{\lambda} \\ \frac{q}{\lambda} &\geq a \end{aligned}$$

$$\begin{aligned} \text{الف) } \Delta &= q - \lambda a \\ \Delta &> 0 \\ q - \lambda a &> 0 \\ q &> \lambda a \\ \frac{q}{\lambda} &> a \end{aligned}$$

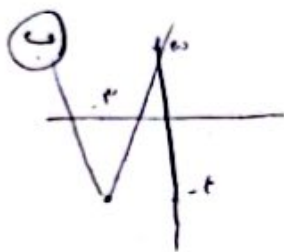
$$\begin{aligned} \text{ب) } \Delta &= 0 \\ q - \lambda a &= 0 \\ q &= \lambda a \\ a &= \frac{q}{\lambda} \end{aligned}$$

$$\begin{aligned} \text{ج) } \Delta &< 0 \\ q - \lambda a &< 0 \\ \lambda a &> q \\ a &> \frac{q}{\lambda} \end{aligned}$$

✓

$$y = \pi^r + q\pi + \omega$$

$$\begin{aligned} \text{الف) Min} &\left| \begin{aligned} -\frac{b}{2a} &= -\frac{q}{2} = -r \\ q - \lambda a + \omega &= -f \end{aligned} \right. \end{aligned}$$



$$y = -\pi^r + f\pi - r$$

$$\begin{aligned} \text{الف) Max} &\left| \begin{aligned} -\frac{b}{2a} &= \frac{f}{2} = r \\ -f + \lambda - r &= 1 \end{aligned} \right. \end{aligned}$$



$$\begin{aligned} \text{ب) } -\pi^r + f\pi - r &= 0 \\ \pi^r + f\pi + \frac{r}{r} &= 0 \\ \frac{f}{r} &= 1 \\ \frac{r}{r} &= r \end{aligned}$$

$$\begin{aligned} n &= 1 & n &= r \\ (1, 0) & & (r, 0) \end{aligned}$$

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$$\pi^r - r_m - r = 0$$

$$S = -\frac{b}{a} \rightarrow \frac{r}{r} = r$$

$$P = \frac{c}{a} \rightarrow -\frac{r}{1} = -r$$

$$\begin{aligned} \text{الف) } S^r - r_p \\ q - (-r) &= 1r \end{aligned}$$

$$\begin{aligned} \text{ب) } S^r - r_{sp} \\ r_v + \lambda &= f\omega \end{aligned}$$

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