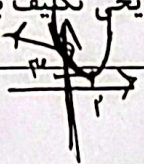
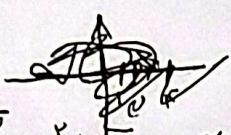


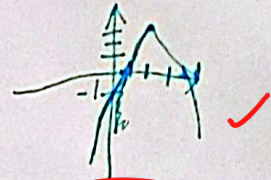
الف) $y = x^2 - 4x + 7$
فاقد ریشه $c = 7$



ب) $y = x^2 - 4x - 1$



e^{x+1}/r



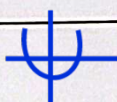
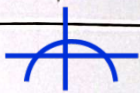
$x_1 = \frac{-(-4) - \sqrt{16 - 4(1)(-1)}}{2(1)} = \frac{4 - \sqrt{20}}{2}$
 $x_2 = \frac{-(-4) + \sqrt{16 - 4(1)(-1)}}{2(1)} = \frac{4 + \sqrt{20}}{2}$

ان $\Delta > 0 \Rightarrow (m+1)^2 - 4(m+1) = m^2 + 2m + 1 - 4m - 4 = m^2 - 2m - 3 = (m-3)(m+1) > 0$
ب) $\Delta = 0 \Rightarrow (m-3)(m+1) = 0 \Rightarrow m = 3, -1$
ج) $\Delta < 0 \Rightarrow m^2 - 2m - 3 < 0 \Rightarrow -1 < m < 3$
د) برای ریشه حقیقی (مختلط و حقیقی)
 $\Delta \geq 0 \Rightarrow m \geq 3 \text{ یا } m \leq -1$

ان $\Delta > 0$ و $p > 0 \Rightarrow (2m^2 - 2)^2 - 4(1-m-2) = 4m^4 - 8m^2 + 4 - 4 + 4m + 8 = 4m^4 - 8m^2 + 4m + 8 > 0$
ب) برای ریشه حقیقی $m^2 - 1m + 2 \geq 0 \Rightarrow \Delta = 1 - 8 < 0$ پس همیشه حقیقی است.

ب) $\Delta < 0 \Rightarrow \frac{2(m+1)}{m-2} < 0 \Rightarrow -1 < m < 2$
 $p > 0 \Rightarrow \frac{1}{m-2} > 0 \Rightarrow m > 2$

$\Delta > 0 \Rightarrow \sin^2 \alpha - 4 \sin \alpha + 4 > 0 \Rightarrow (\sin \alpha - 2)^2 > 0$
ب) $\sin \frac{k\pi}{r} = 1 \Rightarrow \frac{k\pi}{r} = \frac{\pi}{2} \Rightarrow k = \frac{r}{2}$
ج) $\sin \frac{k\pi}{r} = -1 \Rightarrow \frac{k\pi}{r} = \frac{3\pi}{2} \Rightarrow k = \frac{3r}{2}$



$\Delta > 0$
 $p < 0 \Rightarrow$ فاصله از صفر

الف)

$p < 0 \Rightarrow \frac{1}{m-2} < 0 \Rightarrow m < 2$

$n_{ext} = -\frac{b}{2a} = -\frac{2(m+1)}{2(m-2)} = -1 \Rightarrow m = 1$

ب)

$$\frac{(r-1)(r-1)(r-1)}{1-r} = \frac{(r-1)(r+1)(r-1)}{(1-r)(1+r)} = \frac{(r+1)(r-1)}{1}$$

$$-4r^2 + 12r + 12$$

$$\text{ext } \frac{b}{a} = \frac{12}{-4}$$

$$y = \frac{12}{-4}$$

$$r \neq 0 \quad r + \frac{r}{m} = \frac{-10 + 12m}{m}$$

$$r - r \rho_2 \alpha^r + \beta^r$$

$$r + \frac{r}{m} = \frac{-10 + 12m}{m} \quad \frac{(r \rho)^r}{\rho} + \frac{r \rho}{r} = \alpha^r + \beta^r$$

$$m = r \rightarrow \alpha^r + \beta^r = S^r - r \rho = \frac{12}{-4}$$

$$r = \alpha \rho_2 r \Rightarrow \alpha \beta < r$$

$$I = \alpha - \beta$$

$$\beta = \alpha \rho_2 \alpha \rho_2 \alpha$$

$$\frac{r \alpha + \beta^r}{\alpha \rho^r} = \frac{r \alpha + \beta^r}{\alpha \rho^r} = \frac{r \alpha}{\alpha \rho^r} + \frac{\beta^r}{\alpha \rho^r} = \frac{r \alpha}{\alpha \rho^r} + \frac{\beta^r}{\alpha}$$

$$P = \alpha \beta - r - \beta = \frac{r}{\alpha}$$

$$\frac{r \alpha}{\alpha (\frac{r}{\alpha})^r} + \frac{\beta^r}{\alpha} = \frac{\alpha^r + \beta^r}{\alpha} = \frac{S^r - r \rho}{\alpha} = 19$$

$$a x^r + b x + c = y$$

$$a x^r + b x + c = 2 x^r + 10$$

$$0 + 0 + c = 2 x^r = 10$$

$$a x^r + (b-r) x + c = 0$$

$$\frac{b-r}{a} = \frac{-1}{2} \quad \frac{-r}{a} = -6$$

$$b-r = -a \quad d < 1$$

$$b < -r a \Rightarrow b < -r$$

$$y = r x^r + (m+1) x + m + y$$

$$y = x \text{ i.e. } \Rightarrow r x^r + (m+1) x + m + y = x$$

$$r x^r + m x + m + y = 0$$

$$x = 0 \quad \Delta = 0 \quad \checkmark$$

$$x = m = 12$$

$$x = -r$$

$$m^r - 1(m+y) = 0 \Rightarrow m^r - 1m - y = 0$$

$$\begin{aligned} \underline{(1, 14)} &\rightarrow 1a + 1b + 1c = 14 \\ \underline{(-3, 4)} &\rightarrow 9a - 3b + 1c = 4 \end{aligned} \quad \left\{ \begin{array}{l} \xrightarrow{+3} \\ \xrightarrow{-c} \end{array} \right. \quad \begin{array}{l} a = 1 \\ b = 3 \end{array}$$

7

$$\underline{(0, 4)} \rightarrow c = 4$$

$$y = n^r + 3n + 4 \rightarrow \text{clases} : n_{\text{ext}} = \frac{-3}{r}$$