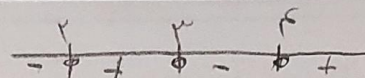
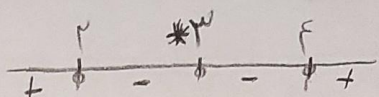


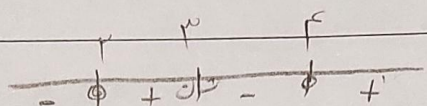
الف) $\{2, 3, 4\}$: ریشه ها در (الف)



ب) $\{2, 3, 4\}$: ریشه ها در (ب)



الف) $y = \frac{(x-2)(x-4)}{(x-3)^2}$

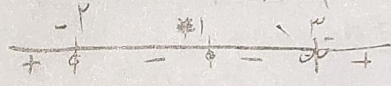


ب) $\frac{(x-2)(x-4)}{(x-3)^2}$



الف) $y = \frac{x^3 - 3x^2 + 2}{x^4 - 4x^2}$

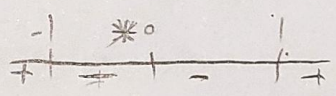
$$\frac{x^3 - 3x^2 + 2}{x^4 - 4x^2} = \frac{x^3 - 3x^2 + 2}{x^2(x^2 - 4)} = \frac{x^3 - 3x^2 + 2}{x^2(x-2)(x+2)}$$



$$\Rightarrow \frac{x^3 - 3x^2 + 2}{x^4 - 4x^2} = \frac{(x-1)(x-2)}{x^2(x-2)(x+2)}$$



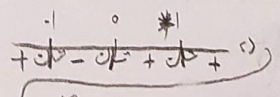
الف) $y = \frac{(x^2 - x)(x^2 + x)}{x^3 + x^2 + 2}$



$$\Rightarrow y = \frac{x^4 + 3x^2 + 4}{x^3 + x^2 + 2} \Rightarrow y \rightarrow + \infty$$

الف) $\sqrt{\frac{x^3 - 1}{x^2 - x}}$

$$= \sqrt{\frac{x^3 - 1}{x(x^2 - 1)}} = \sqrt{\frac{x^3 - 1}{x(x-1)(x+1)}}$$



$$\Rightarrow \sqrt{\frac{(x-1)(x+1)}{(x-1)(x-4)}}$$

$$= \frac{1}{\sqrt{x-4}}$$

