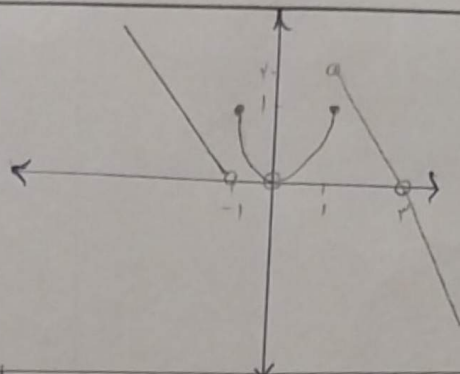
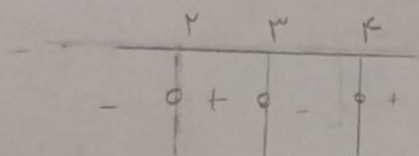


$$f(x) = \begin{cases} -x+2 & x > 1 \\ x^3 & -1 < x \leq 1 \\ -x-1 & x < -1 \end{cases}$$



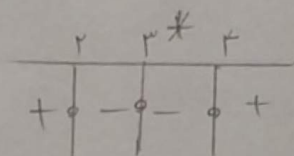
٦

الف) $y = (x-2)(x-3)(x-4) \Rightarrow 2, 3, 4$



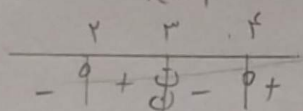
ب) $y = (x-2)(x-3)^2(x-4) \Rightarrow$

٢, ٣, ٤

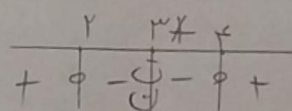


٧

الف) $y = \frac{(x-2)(x-4)}{x-3} \Rightarrow 2, 3, 4$



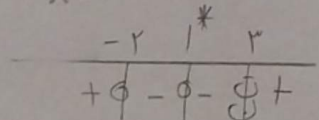
ب) $\frac{(x-2)(x-4)}{(x-3)^2} \Rightarrow 2, 3, 4$



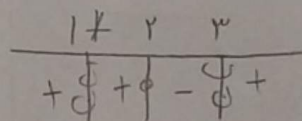
٨

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

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



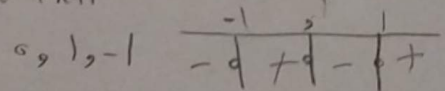
ب) $\frac{x^3 - 3x + 2}{x^2 - 4x + 3} = \frac{(x-1)(x-2)}{(x-1)(x-3)} \Rightarrow$



٩

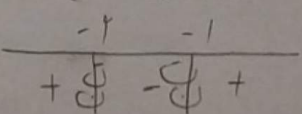
الف) $\frac{x^2 - x^3}{x^2 + x + 2} \Rightarrow \frac{x^2(x^2 - 1)}{x^2 + x + 2} =$

$\frac{x^2(x-1)(x+1)}{x^2 + x + 2} \Rightarrow \frac{-1 \pm \sqrt{1-4}}{2} \Rightarrow \Delta \text{ منفي} \Rightarrow$



ب) $\frac{x^2 + 3x + 2}{x^2 + 2x + 2} = \Delta \text{ منفي} \Rightarrow$

$\Delta = (x+1)(x+2) \Rightarrow -2, -1$



١٠

الف) $y^2 = 2x^2 - 1 \Rightarrow y^2 = -1 \Rightarrow y = -1$ $x=0 \Rightarrow y^2 = -1 \Rightarrow y = 1$ <u>ج</u>	ب) $y^2 + y = 3x^2 - 1$ <u>ج</u>	۱
الف) $y = x^2 - 1 \Rightarrow x=0 \Rightarrow y = -1, x=1 \Rightarrow y = 0, x=-1 \Rightarrow y = 0 \dots$ <u>ج</u>	ب) $ y + xy = x^2 + 1 \Rightarrow x=0 \Rightarrow y = 1 \Rightarrow y = \pm 1$ <u>ج</u>	۲
ج) $y^3 + x^3 = 2x - 1 \Rightarrow x=2 \Rightarrow y^3 + 8 = 4 - 1 \Rightarrow y^3 = -5 \Rightarrow y = \sqrt[3]{-5}$ <u>ج</u>	د) $\sqrt[3]{y} + \sqrt[3]{x} = 2 \Rightarrow \sqrt[3]{y} + 1 = 2 \Rightarrow y = 1$ <u>ج</u>	۳
الف) $\tan \frac{\pi}{3} = \frac{\frac{\sqrt{3}}{2}}{\frac{1}{2}} = \sqrt{3}$ 60°	ب) $\cot \frac{\sqrt{3}\pi}{6} = \frac{-\frac{\sqrt{3}}{2}}{-\frac{1}{2}} = \sqrt{3}$ 210°	۴
ج) $\tan 230^\circ = \frac{-\frac{1}{\sqrt{3}}}{\frac{\sqrt{3}}{2}} = -\frac{2}{3}$	د) $\cot 180^\circ = \frac{-1}{0} = -1$	۵
الف) $\sin \alpha = \frac{1}{2}$ $0 < \alpha < 2\pi \Rightarrow \frac{\pi}{6}, \frac{5\pi}{6}$ <u>۳۰, ۱۵۰</u>	ب) $\cos \alpha = \frac{\sqrt{2}}{2} \Rightarrow \frac{\pi}{4}, \frac{7\pi}{4}$ <u>۴۵, ۳۱۵</u>	۶
$f(x) = \begin{cases} -2x+4 & x > 1 \\ x^2 & -1 < x < 1 \\ x+1 & x < -1 \end{cases}$		۷