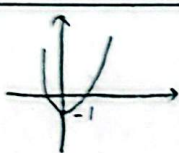
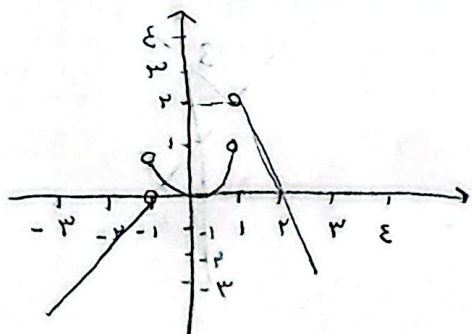
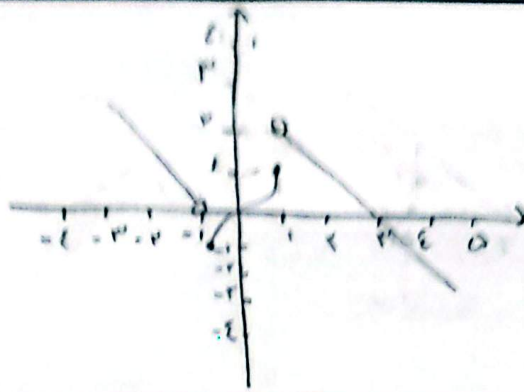
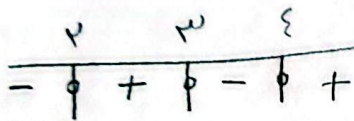


$\left. \begin{aligned} y_1^3 &= 2x_1^2 - 1 \\ y_2^3 &= 2x_2^2 - 1 \end{aligned} \right\} \begin{aligned} x_1 &= x_2 \\ y_1^3 &= y_2^3 \end{aligned}$ تابع است $y_1 = y_2$	$\left. \begin{aligned} y_1^3 + y_1 &= 3x_1^2 - 1 \\ y_2^3 + y_2 &= 3x_2^2 - 1 \end{aligned} \right\} x_1 = x_2$ $y_1^3 + y_1 = y_2^3 + y_2 \rightarrow y_1^3 - y_2^3 + y_1 - y_2 = 0$ $(y_1 - y_2)(y_1^2 + y_1 y_2 + y_2^2 + y_1 + y_2 + 1) = 0$ از آنجا که $y_1 \neq y_2$ پس $y_1^2 + y_1 y_2 + y_2^2 + y_1 + y_2 + 1 = 0$	۱		
الف)  تابع است	ب) $y + x y = x^2 + 1$ $x = 0$ $y = \pm 1$ تابع نیست	ج) $y_1^3 = -x_1^2 + 2x_1 - 1$ $y_2^3 = -x_2^2 + 2x_2 - 1$ $x_1 = x_2$ $y_1^3 = y_2^3 \rightarrow y_1 = y_2$ تابع است	د) $\sqrt[3]{y_1} = \sqrt[3]{2 - x_1}$ $\sqrt[3]{y_2} = \sqrt[3]{2 - x_2}$ $x_1 = x_2$ $\sqrt[3]{y_1} = \sqrt[3]{y_2} \rightarrow y_1 = y_2$	۲
الف) $\tan 40^\circ$ $\frac{\sin}{\cos} = \frac{\frac{\sqrt{3}}{2}}{\frac{1}{2}} = \sqrt{3}$	ب) $\cot 20^\circ$ $\frac{\cos}{\sin} = \frac{\frac{\sqrt{3}}{2}}{\frac{1}{2}} = \sqrt{3}$ $\sqrt{3}$	ج) $\tan 30^\circ$ $\frac{\sin}{\cos} = \frac{\frac{1}{2}}{\frac{\sqrt{3}}{2}} = \frac{1}{\sqrt{3}}$	د) $\cot 110^\circ$ $\frac{\cos}{\sin} = \frac{-1}{0}$ تعریف نشده	۳
الف) $0 \leq \alpha < 2\pi$ $\sin \alpha = \frac{1}{2}$ $\alpha = 30^\circ \text{ و } 150^\circ$ $\alpha = \frac{\pi}{6} \text{ و } \frac{5\pi}{6}$	ب) $0 \leq \alpha < 2\pi$ $\cos \alpha = \frac{\sqrt{2}}{2}$ $\alpha = 45^\circ \text{ و } 315^\circ$ $\alpha = \frac{\pi}{4} \text{ و } \frac{7\pi}{4}$	د) $2\pi < \frac{\sqrt{2}\pi}{\epsilon}$		۴
				۵



6

الف) $y = (x-2)(x-3)(x-5)$

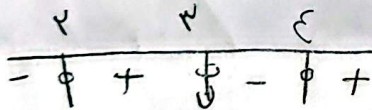


ب) $y = (x-2)(x-3)^2(x-5)$

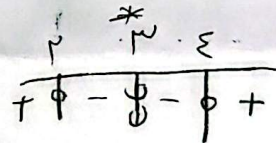


7

الف) $\frac{(x^2-2)(x^2-5)}{x^2-3}$

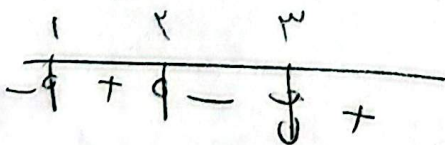


ب) $y = \frac{(x-2)(x-5)}{(x-3)^2}$

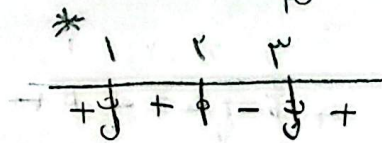


8

الف) $\frac{x^3-3x^2+2}{x^2-3}$

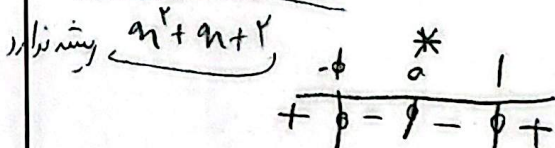


ب) $\frac{x^2-3x+2}{x^2-5x+6} = \frac{(x-2)(x-1)}{(x-3)(x-2)}$



9

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



ب) $\frac{x^2+3x+2}{x^2+3x+2} = 1$

10