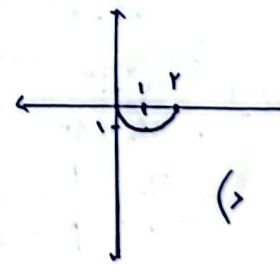
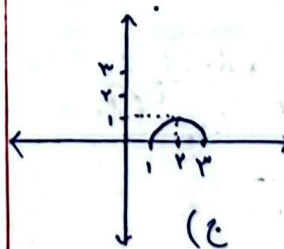
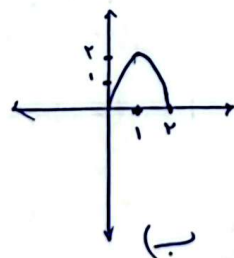
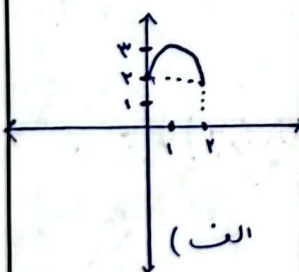
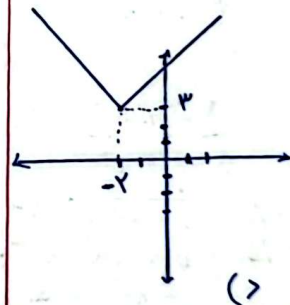
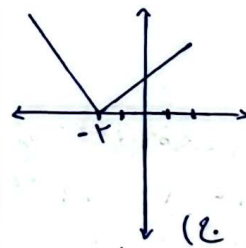
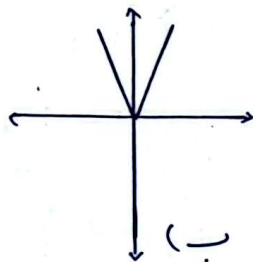
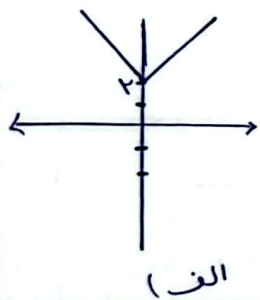


تابع هست $\rightarrow y^3 - x = 2x^2 \xrightarrow{x=0} y^3 = 0 \checkmark, \xrightarrow{x=1} y^3 = 3 \checkmark, \xrightarrow{x=2} y^3 = 6 \checkmark$ (الف)
 تابع نیست $\rightarrow |y| + x^2 = x + 3 \xrightarrow{x=0} |y| = 3 \rightarrow y = \pm 3$ (ب)
 تابع نیست $\rightarrow \sqrt{x-4} + |y-2| = 0 \xrightarrow{x=4} \sqrt{1} + |y-2| = 0 \rightarrow |y-2| = 0 \rightarrow y = 2$ (ج)
 تابع نیست $\rightarrow x = \cos y \xrightarrow{x=0} \cos y = 0 \rightarrow y = 90^\circ, \rightarrow y = \frac{\pi}{2}, \frac{3\pi}{2}$ (د)

(الف) $y = \frac{x+4}{x^2-4x} \rightarrow x^2-4x=0 \rightarrow x=4 \rightarrow D_f = \mathbb{R} - \{4\}$
 (ب) $y = \frac{x+4}{x^2-4x+12} \rightarrow \Delta = \sqrt{b^2-4ac} \rightarrow \Delta = \sqrt{16-48} \rightarrow \Delta < 0 \rightarrow D_f = \mathbb{R}$
 (ج) $y = \frac{x+4}{x^2+x+2} \rightarrow \Delta = \sqrt{b^2-4ac} \rightarrow \Delta = \sqrt{1-16} \rightarrow \Delta < 0 \rightarrow D_f = \mathbb{R}$
 (د) $y = \frac{x+4}{x^2-4x^2} \rightarrow x^2-4x^2=0 \rightarrow (x^2-4x)(x^2+4x)=0 \xrightarrow{x=0} \xrightarrow{x=-4} \rightarrow D_f = \mathbb{R} - \{2, -2, 0\}$

(الف) $y = \sqrt{4-x} + \sqrt{x-2} \rightarrow \begin{cases} 4-x \geq 0 \rightarrow x \leq 4 \\ x-2 \geq 0 \rightarrow x \geq 2 \end{cases} \xrightarrow{\cap} D_f = [2, 4]$
 (ب) $y = \frac{3x+1}{x^2+1} \rightarrow x^2+1 > 0$ همیشه $\rightarrow D_f = \mathbb{R}$
 (ج) $y = \frac{\sqrt{x-2}}{x-4} \rightarrow \begin{cases} x-4=0 \rightarrow x=4 \\ x-2 \geq 0 \rightarrow x \geq 2 \end{cases} \xrightarrow{\cap} D_f = [2, +\infty) - \{4\}$
 (د) $y = \frac{2x+3}{|x|+x^2} \rightarrow |x|+x^2=0 \rightarrow x=0$ تنها جواب $\rightarrow D_f = \mathbb{R} - \{0\}$



الف) $y = (x-2)(x-3)(x-4)$ ب) $y = (x-2)(x-3)^2(x-4)$ ج) $y = (x-2)(x-3)(x-3)(x-4)$		٦
الف) $y = \frac{(x-2)(x-4)}{x-3}$ ب) $y = \frac{(x-2)(x-4)}{(x-3)^2}$		٧
الف) $y = \frac{x^3-3x+2}{x-3} \Rightarrow \frac{(x-1)^2(x+2)}{x-3}$ ب) $y = \frac{x^3-3x+2}{x^2-4x+3} = \frac{(x-1)(x-2)}{(x-1)(x-3)}$		٨
الف) $y = \frac{x^4-x^2}{x^2+x+2} \rightarrow \frac{x^2(x-1)(x+1)}{x^2+x+2}$ ب) $y = \frac{x^2+3x+2}{x^2+2x+3} =$ صورت $\Delta \rightarrow b^2-4ac = 9-12 \rightarrow \Delta < 0 \rightarrow$ صورت $\Delta \rightarrow b^2-4ac = 4-12 \rightarrow \Delta < 0 \rightarrow$		٩
الف) $y = \sqrt{\frac{x^3-1}{x^3-x}} \rightarrow \frac{+}{-} \rightarrow \sqrt{\frac{x^3-x}{x^3-x}} \rightarrow \mathbb{R}(x-1)(x+1)$ $\{x=0, x=1, x=-1\} \rightarrow D_f = \mathbb{R} - \{0, 1, -1\}$ ب) $y = \sqrt{\frac{x^2-14}{x^2-5x+4}} \Rightarrow \sqrt{\frac{(x-4)(x+4)}{(x-1)(x-4)}} \Rightarrow D_f = (-\infty, -4] \cup (1, 4) \cup (4, +\infty)$		