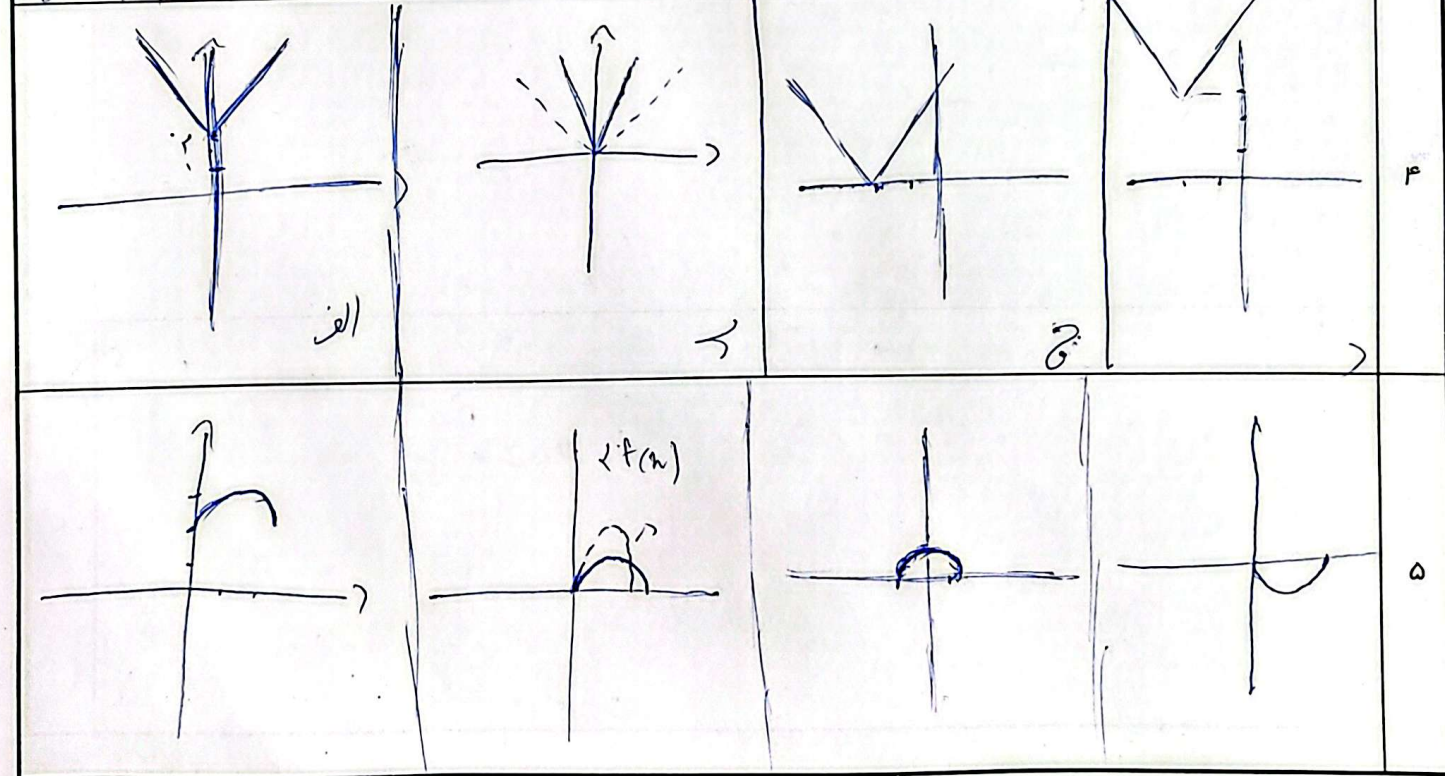


الف) $y^2 - x = 2x^2 \Rightarrow y^2 = 2x^2 + x \Rightarrow y = \sqrt{2x^2 + x}$
 ب) $|y| + x^2 = x + 2 \Rightarrow |y| = x + 2 - x^2$
 ج) تابع گسسته $\rightarrow$ برای $x = 0$ تابع است $\rightarrow$ $y = \pm(x + 2 - x^2)$
 د) $\sqrt{2x^2 - 4} + |y - 2| = 0 \Rightarrow \sqrt{2x^2 - 4} = 0 \wedge |y - 2| = 0 \Rightarrow x = \pm \sqrt{2} \wedge y = 2$
 تابع است $\rightarrow x = \cos y$

الف) $\frac{x+4}{x^2-4x} \Rightarrow x = -4$ و $x = 4$ $(-\infty, -4] \cup (4, +\infty)$
 ب) $\frac{x+4}{x^2-4x} \Rightarrow x = 4$ و $x = -4$ $[-4, 4] \cup (4, +\infty)$
 ج) $\frac{x+4}{x^2-4x} \Rightarrow x = -4$ و $x = 4$ $(-\infty, -4] \cup (4, +\infty)$
 د) $\frac{x+4}{x^2-4x} \Rightarrow x = -4$ و $x = 4$ $[-4, 4] \cup (4, +\infty)$

الف) $y = \sqrt{4-x} + \sqrt{x-2} \rightarrow 4-x \geq 0 \rightarrow x \leq 4$ و $x-2 \geq 0 \rightarrow x \geq 2$
 ب) $y = \frac{x+1}{x^2+1} \rightarrow \mathbb{R} = \text{دامنه}$
 ج) $y = \frac{\sqrt{x-2}}{x-4} \rightarrow x-2 \geq 0 \rightarrow x \geq 2$ و $x-4 \neq 0 \rightarrow x \neq 4$
 د) $y = \frac{x+2}{|x|+x^2} \rightarrow \mathbb{R} = \text{دامنه}$



$$y = (x-1)(x-2)(x-3)$$

(الف)

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$$y = (x-1)(x-2)^2(x-3)$$

(ب)

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

(الف)

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

(ب)

$$\frac{x^2-xn+1}{x^2-x}$$

(الف)

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$$\frac{x^2-xn+1}{x^2-xn+2}, n=1$$

(ب)

$$\frac{x^2-x}{x^2+x+2} \rightarrow x^2(x-1) \rightarrow x^2(x-1)(n+1)$$

(الف)

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$$y = \frac{x^2+x+2}{x^2+x+2}$$

(ب)

$$y = \sqrt{\frac{x^2-1}{x^2-x}} \rightarrow x^2-1 > 0 \rightarrow x^2 > 1 \rightarrow x > 1$$

(الف)

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$$y = \sqrt{\frac{x^2-14}{x^2-12x+20}} \rightarrow x^2-14 > 0 \rightarrow x^2 > 14 \rightarrow x > \sqrt{14}$$

(ب)