

الف) $y_1^3 = m + 2m^2$
 $y_2^3 = m + 2m^2$ $\rightarrow y_1^3 = y_2^3 \rightarrow y_1 = y_2$ $\rightarrow$ تابع است

ب) $|y_1| = -m^2 + m + 3$
 $|y_2| = -m^2 + m + 3$ $\rightarrow |y_1| = |y_2| \rightarrow y_1 = \pm y_2$ $\rightarrow$ تابع است

ج) $\sqrt{m-4} \geq 0 \rightarrow m \geq 4$ $|y-2| \geq 0 \rightarrow y \geq 2$ $\rightarrow$ تابع است

د) $x=0 \rightarrow$ تابع است

الف) $m^2 - 4m \neq 0$ $m(m-4) \neq 0 \rightarrow m \neq 0, m \neq 4 \rightarrow D_f = \mathbb{R} - \{0, 4\}$

ب) $b^2 - 4ac \rightarrow 9 - 4 \cdot 4 = -15$ $\rightarrow$ دایره منفرجه $\rightarrow \mathbb{R}$

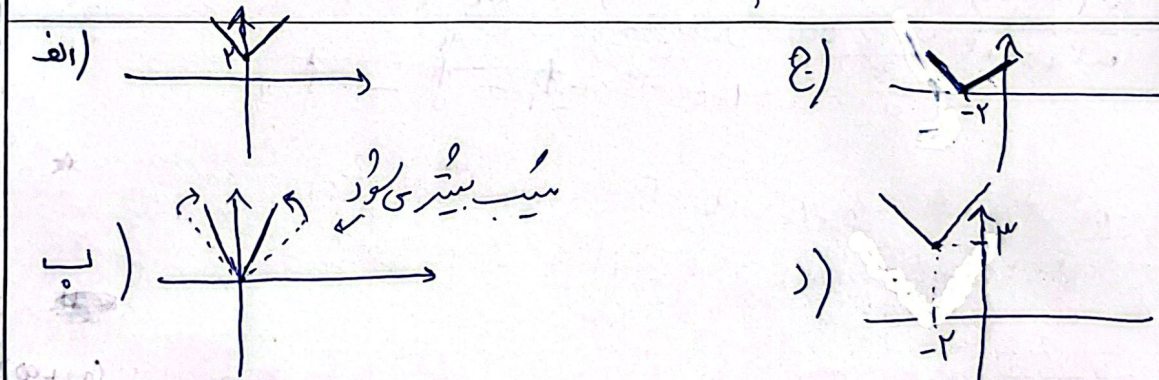
ج) $b^2 - 4ac \rightarrow 1 - 4 \cdot 4 = -15$ $\rightarrow$ دایره منفرجه $\rightarrow \mathbb{R}$

د) $m^2 - 4m^2 \neq 0 \rightarrow m^2(m^2 - 4) \neq 0 \rightarrow m^2(m-2)(m+2) \rightarrow \mathbb{R} - \{0, -2, 2\}$

الف) $\sqrt{4-m} \geq 0 \rightarrow 4-m \geq 0 \rightarrow m \leq 4$
 $\sqrt{m-2} \geq 0 \rightarrow m-2 \geq 0 \rightarrow m \geq 2$ $\rightarrow [2, 4]$

ب) $m^2 + 1 \neq 0 \rightarrow m^2 \neq -1$ $\rightarrow \mathbb{R}$

ج) $m-2 \geq 0 \rightarrow m \geq 2$ $\rightarrow [2, +\infty)$ $\rightarrow \{4\}$



الف)
$$-\frac{1}{2} + \frac{1}{3} - \frac{1}{4} +$$

$$y = (n-2)(n-3)(n-4)$$

ب)
$$+\frac{1}{2} - \frac{1}{3} + \frac{1}{4} +$$

$$y = (n-2)(n-3)^2(n-4)$$

الف)
$$y = \frac{(n-2)(n-4)}{n-3}$$

$$-\frac{1}{2} + \frac{1}{3} - \frac{1}{4} +$$

ب)
$$y = \frac{(n-2)(n-4)}{(n-3)^2}$$

$$+\frac{1}{2} - \frac{1}{3} + \frac{1}{4} +$$

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

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

ب)
$$\frac{(n-1)(n-2)}{(n-1)(n-3)}$$

$$\frac{n^3 - 3n^2 + 2}{n^2 + n - 2}$$

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

$$+\frac{1}{2} - \frac{1}{3} + \frac{1}{4} +$$

$$+\frac{1}{2} + \frac{1}{3} - \frac{1}{4} +$$

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

$$n^2(n+1)(n-1)$$

ب)
$$y = \frac{n^3 + 3n^2 + 6}{n^2 + 2n + 2}$$

الف)
$$y = \frac{\sqrt{n^3-1}}{\sqrt{n(n^2-1)}}$$

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

$$(-\infty, -1) \cup (0, 1) \cup (1, +\infty)$$

ب)
$$y = \sqrt{\frac{(n-4)(n+4)}{(n-1)(n-6)}}$$

$$+\frac{1}{2} - \frac{1}{3} + \frac{1}{4} +$$

$$(-\infty, 4] \cup (1, 6) \cup (6, +\infty)$$