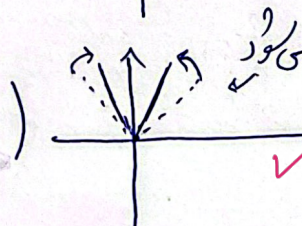
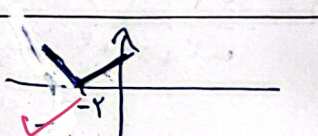
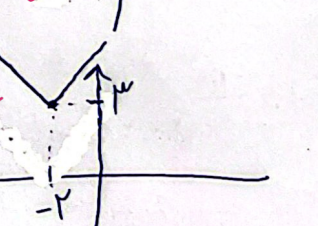
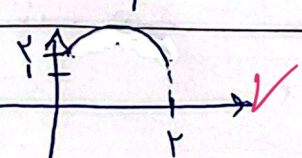
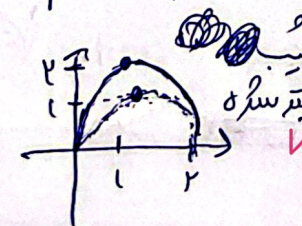
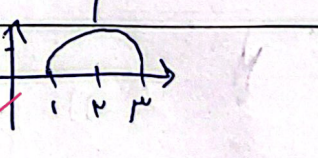
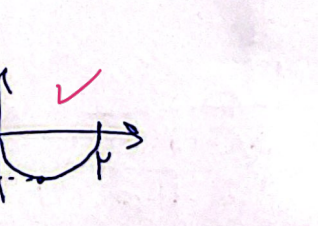


الف) $y_1^3 = m + 2m^2$ $y_2^3 = m + 2m^2$ $\rightarrow y_1^3 = y_2^3 \rightarrow y_1 = y_2$ $\rightarrow$ تابع است ✓
 ب) $|y_1| = |y_2| \rightarrow y_1 = \pm y_2$ $\rightarrow$ تابع نیست
 ج) $|y_2| = m^3 + m + 3$ $\rightarrow$ تابع است ✓
 د) $x=0 \rightarrow$ تابع نیست ✓

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) $b^2 - 4ac = 9 - 4 \cdot 4 = -15$ $\rightarrow$ تابع نیست ✓
 ج) $b^2 - 4ac = 1 - 4 \cdot 4 = -15$ $\rightarrow$ تابع نیست ✓
 د) $m^4 - 4m^2 \neq 0 \rightarrow m^2(m^2 - 4) \neq 0 \rightarrow m^2(m-2)(m+2) \rightarrow \mathbb{R} - \{0, 2, -2\}$

الف) $\sqrt{4-m} \geq 0 \rightarrow 4-m \geq 0 \rightarrow m \leq 4$
 $\sqrt{m-2} \geq 0 \rightarrow m-2 \geq 0 \rightarrow m \geq 2$
 ب) $m^2 + 1 \neq 0 \rightarrow m^2 \neq -1$ $\rightarrow \mathbb{R}$ ✓
 ج) $m-2 \geq 0 \rightarrow m \geq 2$ $\rightarrow [2, +\infty)$ ✓
 د) $m \neq 4$ $\rightarrow \mathbb{R} - \{4\}$ ✓

الف)  ✓
 ب)  ✓
 ج)  ✓
 د)  ✓

الف)  ✓
 ب)  ✓
 ج)  ✓
 د)  ✓

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

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

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

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

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

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

ب) $\frac{(n-1)(n-2)}{(n-1)(n-3)}$

$\frac{n^3 - 3n^2 + 2}{n^2 - 3n + 2}$
 $\frac{-n^3 + n^2}{n^2 - 3n + 2}$
 $\frac{-2n + 2}{n^2 - 3n + 2}$
 $\frac{+2n - 4}{n^2 - 3n + 2}$
 $\frac{+2}{n^2 - 3n + 2}$

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

الف) $y = \frac{n^2(n^2-1)}{n^2+n+2}$

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

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

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