

بسم الله الرحمن الرحيم « اللهم صل على محمد وآل محمد »

الف) $y^2 - m = 2m^2 \Rightarrow m = 1 \Rightarrow y^2 - 1 = 2 \Rightarrow y^2 = 3 \Rightarrow y = \sqrt{3}$ ✓
تبع است

ب) $|y| + m^2 = m + 3 \Rightarrow m = 1 \Rightarrow |y| + 1 = 1 + 3 \Rightarrow |y| = 3 \Rightarrow y = \pm 3$ ✓
تبع است

ج) $\sqrt{m-4} + |y-2| = 0 \Rightarrow m = 4 \Rightarrow |y-2| = 0 \Rightarrow y = 2$ ✓
تبع است

د) $m = \cos y \quad n = 0 \rightarrow \cos y = 0 \rightarrow y = k\pi + \frac{\pi}{2} \quad (4^\circ, 27^\circ)$ ✓
تبع است

الف) $y = \frac{m+4}{m^2-4m} \Rightarrow m^2-4m \neq 0 \Rightarrow m(m-4) \neq 0 \Rightarrow D_f = \mathbb{R} - \{0, 4\}$ (2)

ب) $y = \frac{m+4}{m^2-4m+14} \Rightarrow \Delta = b^2 - 4ac = 16 - 4 \cdot 1 \cdot 14 = -36 < 0$ ✓
 $D_f = \mathbb{R}$

ج) $y = \frac{m+4}{m^2+m+4} \Rightarrow \Delta = b^2 - 4ac = 1 - 4 \cdot 1 \cdot 4 = -15 < 0$ ✓
 $D_f = \mathbb{R}$

د) $y = \frac{m+4}{m^2-4m^2} \Rightarrow m^2-4m^2 \neq 0 \Rightarrow m^2(m^2-4) \neq 0 \Rightarrow m^2(m-2)(m+2) \neq 0$ ✓
 $D_f = \mathbb{R} - \{0, 2, -2\}$

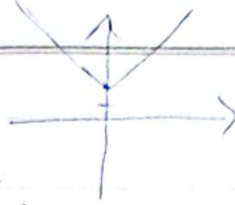
الف) $y = \sqrt{4-m} + \sqrt{m-2} \Rightarrow \begin{cases} \sqrt{4-m} \geq 0 \\ \sqrt{m-2} \geq 0 \end{cases} \Rightarrow \begin{cases} 4-m \geq 0 \\ m-2 \geq 0 \end{cases} \Rightarrow \begin{cases} m \leq 4 \\ m \geq 2 \end{cases} \Rightarrow [2, 4] = D_f$ (3)

ب) $y = \frac{m+1}{m^2+1} \Rightarrow D_f = \mathbb{R}$ ✓

ج) $y = \frac{\sqrt{m-2}}{m-4} \Rightarrow \begin{cases} m-4 \neq 0 \\ m-2 \geq 0 \end{cases} \Rightarrow \begin{cases} m \neq 4 \\ m \geq 2 \end{cases} \Rightarrow D_f = [2, +\infty) - \{4\}$ ✓

د) $y = \frac{2m+9}{m+m^2} \Rightarrow D_f = \mathbb{R} - \{0\}$ ✓
ملاحظة: $m \neq 0$

الف) $y = |m| + 2$

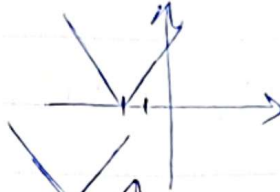


(ع)

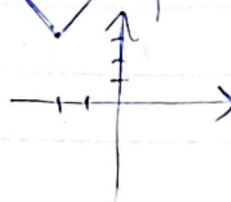
ب) $y = 2|m|$



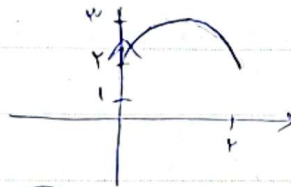
ج) $y = |m+2|$



د) $y = |m+2| + 2$

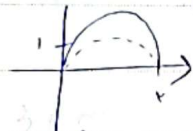


الف) $f(m) + 2$

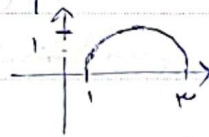


(د)

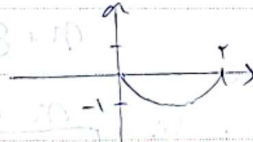
ب) $2f(m)$



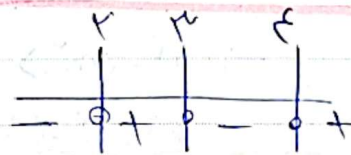
ج) $f(m-1)$



د) $-f(m)$

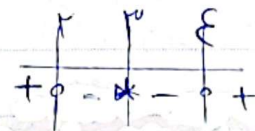


الف) $y = (m-2)(m-5)(m-8)$

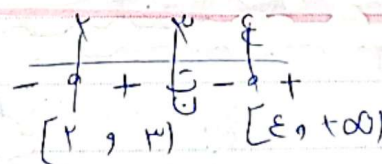


(ع)

ب) $y = \frac{(m-2)(m-5)^2(m-8)}{m-2}$

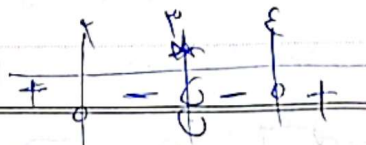


الف) $y = \frac{(m-2)(m-8)}{m-5}$



(د)

ب) $y = \frac{(m-2)(m-8)}{(m-5)^2}$



ا) $y = \frac{n^2 - 3n + 2}{n - 2} = \frac{(n-2)(n-1)}{n-2}$ $\frac{1}{-} \frac{2}{+} \frac{2}{-} \frac{1}{+}$ (1)

ب) $y = \frac{n^2 - 5n + 6}{n^2 - 6n + 9} = \frac{(n-2)(n-3)}{(n-3)(n-3)}$ $\frac{1}{+} \frac{2}{+} \frac{2}{-} \frac{3}{-}$

ج) $y = \frac{n^2 - 4}{n^2 + n + 2} \Rightarrow n^2 - 4 \Rightarrow n^2(n^2 - 1)$ $\frac{n^2}{1} \frac{(n-1)}{-1} \frac{(n+1)}{1}$ $\frac{1}{+} \frac{1}{-} \frac{1}{+}$ (19)

$\Delta = b^2 - 4ac$
 $\Delta = 1 - 4 = -3$ $\Delta = 1 - 4 = -3$

د) $y = \frac{n^2 + 3n + 2}{n^2 + 2n + 2} \Rightarrow \Delta = 9 - 4 = 5$
 $\Delta = b^2 - 4ac$
 $\Delta = 9 - 4 = 5$

هـ) $y = \sqrt{\frac{n^2 - 1}{n^2 - n}}$ $\frac{n^2 - 1}{n^2 - n} \geq 0$ $\frac{n^2 - 1}{n^2 - n} \geq 0$ $\frac{n^2 - 1}{n^2 - n} \geq 0$ $\frac{n^2 - 1}{n^2 - n} \geq 0$ (10)

ب) $y = \sqrt{\frac{n^2 - 14}{n^2 - 4n + 4}}$ $\frac{n^2 - 14}{n^2 - 4n + 4} \geq 0$ $\frac{n^2 - 14}{n^2 - 4n + 4} \geq 0$ $\frac{n^2 - 14}{n^2 - 4n + 4} \geq 0$ $\frac{n^2 - 14}{n^2 - 4n + 4} \geq 0$

و) $\frac{n^2 - 14}{n^2 - 4n + 4} \geq 0 \Rightarrow \frac{(n-4)(n+4)}{(n-2)(n-2)}$ $\frac{-4}{+} \frac{1}{-} \frac{4}{+}$ $\frac{1}{+} \frac{1}{-} \frac{1}{+}$

$n=4$ $n=-4$
 $n=2$ $n=2$
 $n=1$ $n=1$