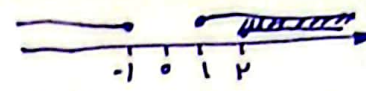
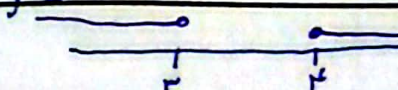
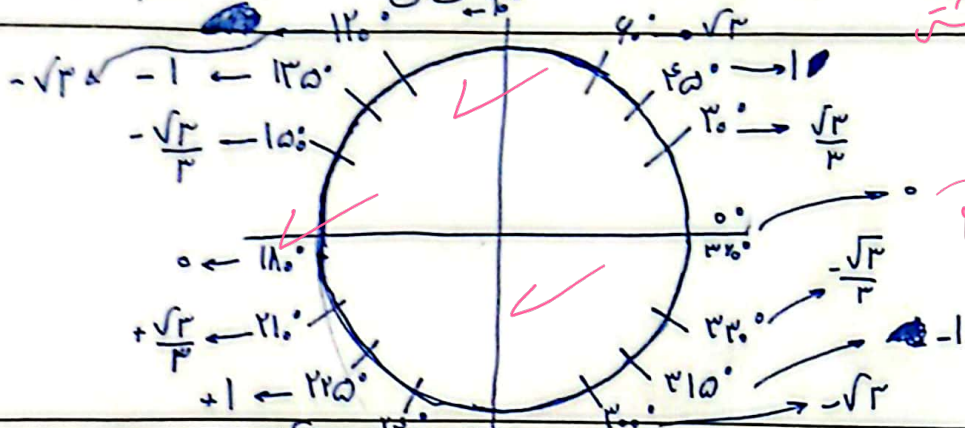


الف) $y = \sqrt{m^2-1} + \sqrt{m-2}$ $m-2 \geq 0 \rightarrow m \geq 2$ $m^2-1 \geq 0 \rightarrow m^2 \geq 1 \rightarrow m \geq 1 \text{ یا } m \leq -1$ $\rightarrow D_f: m \geq 2$ (دسته ۲) ب) $\frac{\sqrt{4-3m}}{\sqrt{4m-3}} \rightarrow \frac{4-3m \geq 0}{4m-3 > 0} \rightarrow \begin{cases} 4-3m \geq 0 \rightarrow m \leq \frac{4}{3} \\ 4m-3 > 0 \rightarrow m > \frac{3}{4} \end{cases}$ $D_f: \frac{3}{4} < m \leq \frac{4}{3}$ (دسته ۱)	 ۶
$y = \sqrt{4m-a} + \sqrt{b-2m}$ چون در اعشاری فقط یک عضو داشته باشیم پس هر دو عبارت در اعشاری منفرد شود $4m-a \rightarrow m=2 \rightarrow 12-a=0 \rightarrow a=12$ $b-2m \rightarrow m=4 \rightarrow b-8=0 \rightarrow b=8$ $\frac{b}{a} = \frac{8}{12} = \frac{2}{3}$	۷
الف) $y = \sqrt{\frac{m^2-m-4}{m^2-13m+34}}$ $\Rightarrow m^2-m-4=0 \rightarrow (m-4)(m+1)=0 \rightarrow m=4, -1$ $t = m^2 \rightarrow t^2-13t+34=0 \rightarrow (t-4)(t-9) \Rightarrow t=4, 9 \rightarrow m = \pm 2, \pm 3$ $D_f: (-\infty, -3) \cup (2, 3) \cup (3, +\infty)$ ب) $\frac{\sqrt{m^2-13m+34}}{m^2-13m+34}$ $D_f: (-\infty, -3) \cup [-2, -1) \cup [1, 2) \cup [3, +\infty)$	۸ آوردن یک و دو جمله ای جمع فرایبر منفرد باشد بر $m-1$ زوج و فرد برابر باشد بر $m+1$ یعنی پذیر است
الف) $y = \sqrt{2[m]-4} - 2[m]-4 \geq 0 \rightarrow [m] \geq 2$ $D_f: [2, +\infty)$ ب) $y = \sqrt{2[m]-4} - 2[m]-4 \geq 0 \rightarrow [m] \geq 2, \infty$ $D_f: [3, +\infty)$	۹
الف) $y = \sqrt{\frac{m+1}{ m-2 }} + \sqrt{\frac{4-m}{m^2+2m+5}}$ $D_f: [-1, 4] - \{2\}$ ب) $y = \sqrt{[m]-4} + \sqrt{2-[m]}$ $[m]-4 \geq 0 \rightarrow [m] \geq 4 \rightarrow m \geq 4$ $2-[m] \geq 0 \rightarrow 2 \geq [m] \rightarrow 3 > m$ $D_f: \emptyset$	۱۰ استخراج داریم! 

افزون عالی نوشتی
tan



الف) $\sin \frac{\pi}{6} + \cos \pi + 2 \tan \frac{\pi}{3} = \frac{1}{2} - 1 + 2(-1) = -2 + \frac{1}{2} = -\frac{3}{2}$

ب) $-\cos \frac{\pi}{6} + \sin \frac{\pi}{3} - 2 \sin \frac{\pi}{4} = -\frac{\sqrt{3}}{2} + \frac{1}{2} - 2(\frac{\sqrt{2}}{2}) = -\frac{\sqrt{3}}{2} + \frac{1}{2} - \sqrt{2}$

ج) $\cot \frac{\pi}{6} + 2 \cot \frac{\pi}{3} - 2 \tan \frac{\pi}{4} = -\frac{\sqrt{3}}{3} + 2(\frac{1}{\sqrt{3}}) - 2(1) = -\frac{\sqrt{3}}{3} + \frac{2\sqrt{3}}{3} - 2 = \frac{\sqrt{3}}{3} - 2$

د) $\cos(\sin \pi) + \sin(\pi \cos \frac{\pi}{3}) = \cos(0) + \sin(\frac{\pi}{2}) = 1 + 1 = 2$

$f(n) = \begin{cases} n^2 + 2n & n \geq a \\ 2n + a + 2 & n \leq a \end{cases}$ $n=a \rightarrow a^2 + 2a = 2a + a + 2 \rightarrow a^2 + a - 2 = 0$
 $(a+2)(a-1) = 0 \rightarrow a = -2 \text{ or } a = 1$
 $a=1$

$f(n) = \begin{cases} n^2 + 2n & n \geq 1 \\ 2n + 2 & n \leq 1 \end{cases}$ $n=1 \rightarrow f(n) = 3$

$f(n) = \begin{cases} 2n^2 - b & |n+1| \geq 2 \\ a + 2n & -3 \leq n \leq -1 \end{cases}$
 $|n+1| \geq 2 \rightarrow n+1 \geq 2 \rightarrow n \geq 1$
 $|n+1| \geq 2 \rightarrow n+1 \leq -2 \rightarrow n \leq -3$
 $n = -3 \rightarrow 1 - b = a - 2 \rightarrow a - b = 3$

الف) $\frac{1}{n^3 - 2n^2} \rightarrow n^3 - 2n^2 \neq 0 \rightarrow n^2(n-2) \neq 0 \rightarrow n \neq 0, 2$
 $D_f: \mathbb{R} - \{0, 2\}$

ب) $\frac{1}{2n^3 + 2n^2 + 2n + 2} \rightarrow 2n^3 + 2n^2 + 2n + 2 \neq 0 \rightarrow 2n^2(n+1) + 2(n+1) \neq 0$
 $(n+1)(2n^2 + 2) \neq 0 \rightarrow n+1 \neq 0 \rightarrow n \neq -1$
 $2n^2 + 2 = 0 \rightarrow 2(n^2 + 1) = 0 \rightarrow n^2 + 1 = 0 \rightarrow n^2 = -1$
 $D_f: \mathbb{R} - \{-1\}$

همواره مثبت است و معجز نمی شود