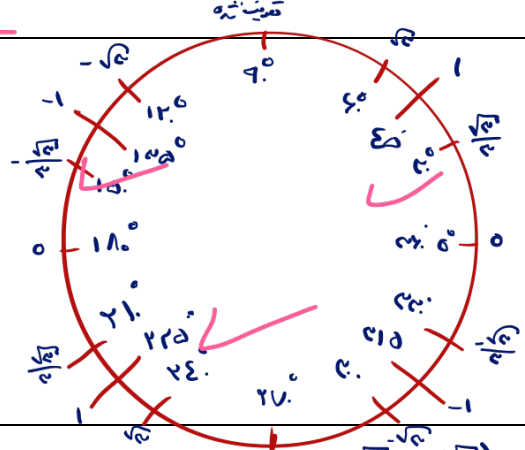


نام و نام خانوادگی آذین پور پاسخنامه تشریحی تکلیف شماره ۲... کلاس ۲م ریاضی B.....

۱۹۵۱۹



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الف) $\frac{1}{2} + (-1) + 2(-1) = \frac{-5}{2}$

ب) $\frac{\sqrt{3}}{2} + 2(\frac{\sqrt{3}}{2}) - 2(-\frac{\sqrt{3}}{2}) = \frac{4\sqrt{3}}{2}$

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ب) $-\frac{(-\sqrt{3}}{2}) + \frac{\sqrt{3}}{2} - 2(-\frac{\sqrt{3}}{2}) = \frac{3\sqrt{3}}{2}$

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

$a^2 + \varepsilon a = 2a + a + 2 \rightarrow a^2 + a - 2 = 0$
 $(a+2)(a-1)$
 $-2 \rightarrow +1 \rightarrow a=1$
 غلط

به ازای a این ۲ عبارت برابرند

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$f(1) = (1)^2 + \varepsilon(1) = 5$

$2n^2 - b = a + 2n$
 $11 - b = a - 4 \rightarrow a + b = 15$

به ازای ۲ دو عبارت برابرند

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$y = \frac{1}{n^5 - \varepsilon n^2} \rightarrow n^5 - \varepsilon n^2 \neq 0 \rightarrow n^2(n - \varepsilon) \neq 0$

$D_f = \mathbb{R} - \{0, \varepsilon\}$

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$y = \frac{1}{2n^5 + \varepsilon n^2 + 2n + \varepsilon} \rightarrow 2n^5 + \varepsilon n^2 + 2n + \varepsilon \neq 0$

$D_f = \mathbb{R} - \{-2\}$

$$y = \sqrt{n^2 - 1} + \sqrt{n - 1}$$

$$\begin{array}{l} n-1 \geq 0 \\ n \geq 1 \rightarrow \end{array} \quad \begin{array}{l} n-r \geq 0 \\ n \geq 1 \end{array}$$

$$y = \frac{\sqrt{4-5n}}{\sqrt{5n-1}} \rightarrow \begin{cases} 4-5n \geq 0 \rightarrow 5n \leq 4 \rightarrow n \leq \frac{4}{5} \\ 5n-1 > 0 \rightarrow 5n > 1 \rightarrow n > \frac{1}{5} \end{cases} \rightarrow n \rightarrow \boxed{\frac{1}{5}, \frac{4}{5}}$$

$$y = \sqrt{4x-a} + \sqrt{b-4x} \rightarrow b-4x \geq 0$$

$$\downarrow$$

$$4x-a \geq 0 \rightarrow 4x \geq a \quad x \leq b \rightarrow x \leq \frac{b}{4}$$

$$x \geq \frac{a}{4}$$

$$\frac{b}{r} = \frac{a}{r} \rightarrow rb = a \rightarrow \frac{b}{a} = \frac{1}{r}$$

(الف) $\sqrt{\frac{x^2 - x - 4}{x^2 - 16x + 64}} \rightarrow \frac{(x-2)(x+2)}{x-8}$
 $\hookrightarrow t^2 - 16t + 64 \rightarrow (t-8)^2$
 $t = 9 \rightarrow t = \pm 1$
 $t = 7 \rightarrow t = \pm 3$
 مراحله با این صفه
 $(-\infty, -8) \cup (-8, -7) \cup (-7, 8)$

$$\frac{x^3 - 2x^2 - 3x + 4}{x^2 + 2x^2 - 3x - 4} \rightarrow \frac{x^3 - 2x^2 - 3x + 4}{x^2 - x - 4} \rightarrow \frac{(x-1)(x^2 - 2x - 4)}{x^2 - x - 4} \rightarrow (x-1)(x^2 - 2x - 4) \rightarrow (x-1)(x-4)(x+2)$$

الف) $y = \sqrt{r[n] - \epsilon} - r[n] - \epsilon \geq 0 \rightarrow r[n] \geq \epsilon \rightarrow [n] \geq r$
 به این معنی که اگر r به قدری کوچک باشد که $r[n] - \epsilon \geq 0$ باشد
 پس $r \geq 0$ $\rightarrow D_2 = [r, +\infty)$

ب) $y = \sqrt{2[n] - 5} \rightarrow 2[n] - 5 \geq 0 \rightarrow 2[n] \geq 5 \rightarrow [n] \geq 2,5 \rightarrow [n] \geq 3$

در جوابی بهتر است همیشه می توانیم $[n]$ بزرگتر از $2,5$ را در نظر بگیریم چون به هر حال که $[n] = 2,5$ نمی شود.

پس $n = 2,5$ باشد که بگوئیم برابر ۲ می شود که جواب ما نیست.

$D_f = [2,5 + \infty)$

الف) $n=1 \rightarrow \sqrt{\frac{n+1}{n-1}} + \sqrt{\frac{4-n}{n^2+2n+2}} \rightarrow n=4$
 $\Delta = b^2 - 4ac = 2 - 2(1)(2) \rightarrow \Delta < 0 \rightarrow \text{لا يوجد حلا حقيقي}$
 $n=2 \rightarrow \sqrt{\frac{3}{1}} + \sqrt{\frac{2}{4+4+2}} = \sqrt{3} + \sqrt{\frac{1}{3}} = \sqrt{3} + \frac{1}{\sqrt{3}} = \frac{3+1}{\sqrt{3}} = \frac{4}{\sqrt{3}}$
 $n=3 \rightarrow \sqrt{\frac{4}{2}} + \sqrt{\frac{1}{9+6+2}} = \sqrt{2} + \sqrt{\frac{1}{17}}$
 $n=4 \rightarrow \sqrt{\frac{5}{3}} + \sqrt{\frac{0}{16+12+2}} = \sqrt{\frac{5}{3}} + 0 = \sqrt{\frac{5}{3}}$
 $n=5 \rightarrow \sqrt{\frac{6}{4}} + \sqrt{\frac{-1}{25+20+2}} = \sqrt{\frac{3}{2}} + \sqrt{\frac{-1}{47}}$
 $n=6 \rightarrow \sqrt{\frac{7}{5}} + \sqrt{\frac{-2}{36+30+2}} = \sqrt{\frac{7}{5}} + \sqrt{\frac{-2}{68}}$
 $n=7 \rightarrow \sqrt{\frac{8}{6}} + \sqrt{\frac{-3}{49+42+2}} = \sqrt{\frac{4}{3}} + \sqrt{\frac{-3}{93}}$
 $n=8 \rightarrow \sqrt{\frac{9}{7}} + \sqrt{\frac{-4}{64+56+2}} = \sqrt{\frac{9}{7}} + \sqrt{\frac{-4}{122}}$
 $n=9 \rightarrow \sqrt{\frac{10}{8}} + \sqrt{\frac{-5}{81+72+2}} = \sqrt{\frac{5}{4}} + \sqrt{\frac{-5}{155}}$
 $n=10 \rightarrow \sqrt{\frac{11}{9}} + \sqrt{\frac{-6}{100+90+2}} = \sqrt{\frac{11}{9}} + \sqrt{\frac{-6}{192}}$
 $n=11 \rightarrow \sqrt{\frac{12}{10}} + \sqrt{\frac{-7}{121+110+2}} = \sqrt{\frac{6}{5}} + \sqrt{\frac{-7}{233}}$
 $n=12 \rightarrow \sqrt{\frac{13}{11}} + \sqrt{\frac{-8}{144+132+2}} = \sqrt{\frac{13}{11}} + \sqrt{\frac{-8}{278}}$
 $n=13 \rightarrow \sqrt{\frac{14}{12}} + \sqrt{\frac{-9}{169+156+2}} = \sqrt{\frac{7}{6}} + \sqrt{\frac{-9}{327}}$
 $n=14 \rightarrow \sqrt{\frac{15}{13}} + \sqrt{\frac{-10}{196+182+2}} = \sqrt{\frac{15}{13}} + \sqrt{\frac{-10}{380}}$
 $n=15 \rightarrow \sqrt{\frac{16}{14}} + \sqrt{\frac{-11}{225+210+2}} = \sqrt{\frac{4}{3.5}} + \sqrt{\frac{-11}{437}}$
 $n=16 \rightarrow \sqrt{\frac{17}{15}} + \sqrt{\frac{-12}{256+240+2}} = \sqrt{\frac{17}{15}} + \sqrt{\frac{-12}{498}}$
 $n=17 \rightarrow \sqrt{\frac{18}{16}} + \sqrt{\frac{-13}{289+272+2}} = \sqrt{\frac{9}{8}} + \sqrt{\frac{-13}{563}}$
 $n=18 \rightarrow \sqrt{\frac{19}{17}} + \sqrt{\frac{-14}{324+306+2}} = \sqrt{\frac{19}{17}} + \sqrt{\frac{-14}{632}}$
 $n=19 \rightarrow \sqrt{\frac{20}{18}} + \sqrt{\frac{-15}{361+342+2}} = \sqrt{\frac{10}{9}} + \sqrt{\frac{-15}{705}}$
 $n=20 \rightarrow \sqrt{\frac{21}{19}} + \sqrt{\frac{-16}{400+380+2}} = \sqrt{\frac{21}{19}} + \sqrt{\frac{-16}{782}}$
 $n=21 \rightarrow \sqrt{\frac{22}{20}} + \sqrt{\frac{-17}{441+420+2}} = \sqrt{\frac{11}{10}} + \sqrt{\frac{-17}{863}}$
 $n=22 \rightarrow \sqrt{\frac{23}{21}} + \sqrt{\frac{-18}{484+462+2}} = \sqrt{\frac{23}{21}} + \sqrt{\frac{-18}{948}}$
 $n=23 \rightarrow \sqrt{\frac{24}{22}} + \sqrt{\frac{-19}{529+506+2}} = \sqrt{\frac{6}{5.5}} + \sqrt{\frac{-19}{1037}}$
 $n=24 \rightarrow \sqrt{\frac{25}{23}} + \sqrt{\frac{-20}{576+552+2}} = \sqrt{\frac{25}{23}} + \sqrt{\frac{-20}{1130}}$
 $n=25 \rightarrow \sqrt{\frac{26}{24}} + \sqrt{\frac{-21}{625+600+2}} = \sqrt{\frac{13}{12}} + \sqrt{\frac{-21}{1227}}$
 $n=26 \rightarrow \sqrt{\frac{27}{25}} + \sqrt{\frac{-22}{676+652+2}} = \sqrt{\frac{27}{25}} + \sqrt{\frac{-22}{1330}}$
 $n=27 \rightarrow \sqrt{\frac{28}{26}} + \sqrt{\frac{-23}{729+702+2}} = \sqrt{\frac{14}{13}} + \sqrt{\frac{-23}{1433}}$
 $n=28 \rightarrow \sqrt{\frac{29}{27}} + \sqrt{\frac{-24}{784+756+2}} = \sqrt{\frac{29}{27}} + \sqrt{\frac{-24}{1542}}$
 $n=29 \rightarrow \sqrt{\frac{30}{28}} + \sqrt{\frac{-25}{841+812+2}} = \sqrt{\frac{15}{14}} + \sqrt{\frac{-25}{1655}}$
 $n=30 \rightarrow \sqrt{\frac{31}{29}} + \sqrt{\frac{-26}{900+870+2}} = \sqrt{\frac{31}{29}} + \sqrt{\frac{-26}{1772}}$
 $n=31 \rightarrow \sqrt{\frac{32}{30}} + \sqrt{\frac{-27}{961+930+2}} = \sqrt{\frac{16}{15}} + \sqrt{\frac{-27}{1893}}$
 $n=32 \rightarrow \sqrt{\frac{33}{31}} + \sqrt{\frac{-28}{1024+992+2}} = \sqrt{\frac{33}{31}} + \sqrt{\frac{-28}{2018}}$
 $n=33 \rightarrow \sqrt{\frac{34}{32}} + \sqrt{\frac{-29}{1089+1062+2}} = \sqrt{\frac{17}{16}} + \sqrt{\frac{-29}{2153}}$
 $n=34 \rightarrow \sqrt{\frac{35}{33}} + \sqrt{\frac{-30}{1156+1134+2}} = \sqrt{\frac{35}{33}} + \sqrt{\frac{-30}{2292}}$
 $n=35 \rightarrow \sqrt{\frac{36}{34}} + \sqrt{\frac{-31}{1225+1210+2}} = \sqrt{\frac{18}{17}} + \sqrt{\frac{-31}{2437}}$
 $n=36 \rightarrow \sqrt{\frac{37}{35}} + \sqrt{\frac{-32}{1296+1284+2}} = \sqrt{\frac{37}{35}} + \sqrt{\frac{-32}{2582}}$
 $n=37 \rightarrow \sqrt{\frac{38}{36}} + \sqrt{\frac{-33}{1369+1362+2}} = \sqrt{\frac{19}{18}} + \sqrt{\frac{-33}{2733}}$
 $n=38 \rightarrow \sqrt{\frac{39}{37}} + \sqrt{\frac{-34}{1444+1446+2}} = \sqrt{\frac{39}{37}} + \sqrt{\frac{-34}{2892}}$
 $n=39 \rightarrow \sqrt{\frac{40}{38}} + \sqrt{\frac{-35}{1521+1530+2}} = \sqrt{\frac{20}{19}} + \sqrt{\frac{-35}{3053}}$
 $n=40 \rightarrow \sqrt{\frac{41}{39}} + \sqrt{\frac{-36}{1600+1602+2}} = \sqrt{\frac{41}{39}} + \sqrt{\frac{-36}{3204}}$
 $n=41 \rightarrow \sqrt{\frac{42}{40}} + \sqrt{\frac{-37}{1681+1684+2}} = \sqrt{\frac{21}{20}} + \sqrt{\frac{-37}{3367}}$
 $n=42 \rightarrow \sqrt{\frac{43}{41}} + \sqrt{\frac{-38}{1764+1770+2}} = \sqrt{\frac{43}{41}} + \sqrt{\frac{-38}{3536}}$
 $n=43 \rightarrow \sqrt{\frac{44}{42}} + \sqrt{\frac{-39}{1849+1854+2}} = \sqrt{\frac{22}{21}} + \sqrt{\frac{-39}{3705}}$
 $n=44 \rightarrow \sqrt{\frac{45}{43}} + \sqrt{\frac{-40}{1936+1926+2}} = \sqrt{\frac{45}{43}} + \sqrt{\frac{-40}{3864}}$
 $n=45 \rightarrow \sqrt{\frac{46}{44}} + \sqrt{\frac{-41}{2025+1998+2}} = \sqrt{\frac{23}{22}} + \sqrt{\frac{-41}{4025}}$
 $n=46 \rightarrow \sqrt{\frac{47}{45}} + \sqrt{\frac{-42}{2116+2082+2}} = \sqrt{\frac{47}{45}} + \sqrt{\frac{-42}{4200}}$
 $n=47 \rightarrow \sqrt{\frac{48}{46}} + \sqrt{\frac{-43}{2209+2170+2}} = \sqrt{\frac{24}{23}} + \sqrt{\frac{-43}{4381}}$
 $n=48 \rightarrow \sqrt{\frac{49}{47}} + \sqrt{\frac{-44}{2304+2268+2}} = \sqrt{\frac{49}{47}} + \sqrt{\frac{-44}{4574}}$
 $n=49 \rightarrow \sqrt{\frac{50}{48}} + \sqrt{\frac{-45}{2401+2364+2}} = \sqrt{\frac{25}{24}} + \sqrt{\frac{-45}{4767}}$
 $n=50 \rightarrow \sqrt{\frac{51}{49}} + \sqrt{\frac{-46}{2500+2466+2}} = \sqrt{\frac{51}{49}} + \sqrt{\frac{-46}{4968}}$
 $n=51 \rightarrow \sqrt{\frac{52}{50}} + \sqrt{\frac{-47}{2601+2570+2}} = \sqrt{\frac{26}{25}} + \sqrt{\frac{-47}{5133}}$
 $n=52 \rightarrow \sqrt{\frac{53}{51}} + \sqrt{\frac{-48}{2704+2682+2}} = \sqrt{\frac{53}{51}} + \sqrt{\frac{-48}{5318}}$
 $n=53 \rightarrow \sqrt{\frac{54}{52}} + \sqrt{\frac{-49}{2809+2796+2}} = \sqrt{\frac{27}{26}} + \sqrt{\frac{-49}{5507}}$
 $n=54 \rightarrow \sqrt{\frac{55}{53}} + \sqrt{\frac{-50}{2916+2910+2}} = \sqrt{\frac{55}{53}} + \sqrt{\frac{-50}{5828}}$
 $n=55 \rightarrow \sqrt{\frac{56}{54}} + \sqrt{\frac{-51}{3025+3030+2}} = \sqrt{\frac{28}{27}} + \sqrt{\frac{-51}{6057}}$
 $n=56 \rightarrow \sqrt{\frac{57}{55}} + \sqrt{\frac{-52}{3136+3152+2}} = \sqrt{\frac{57}{55}} + \sqrt{\frac{-52}{6290}}$
 $n=57 \rightarrow \sqrt{\frac{58}{56}} + \sqrt{\frac{-53}{3249+3264+2}} = \sqrt{\frac{29}{28}} + \sqrt{\frac{-53}{6515}}$
 $n=58 \rightarrow \sqrt{\frac{59}{57}} + \sqrt{\frac{-54}{3364+3384+2}} = \sqrt{\frac{59}{57}} + \sqrt{\frac{-54}{6750}}$
 $n=59 \rightarrow \sqrt{\frac{60}{58}} + \sqrt{\frac{-55}{3481+3502+2}} = \sqrt{\frac{30}{29}} + \sqrt{\frac{-55}{6935}}$
 $n=60 \rightarrow \sqrt{\frac{61}{59}} + \sqrt{\frac$

$$\text{ب) } y = \sqrt{[x]-1} + \sqrt{2-[x]} \rightsquigarrow [x] \geq 1 \rightarrow x \geq 1 \rightarrow [1, +\infty) \quad \left. \begin{array}{l} \\ \\ \end{array} \right\} \cap D_f = \emptyset$$

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الف- ٨) $y = \sqrt{\frac{x^2 - x - 4}{x^4 - 13x^2 + 34}} \gtrsim \frac{x^2 - x - 4}{x^4 - 13x^2 + 34} \geq 0 \gtrsim \frac{(x-3)(x+2)}{(x^2-9)(x^2-4)} \geq 0$

$\frac{(x-3)(x+2)}{(x-3)(x+3)(x-2)(x+2)} \geq 0 \gtrsim$

-3	-2	2	3
$+$	$-$	$-$	$+$
$+$	$-$	$-$	$+$

$D_f = (-\infty, -3) \cup (2, 3) \cup (3, +\infty)$