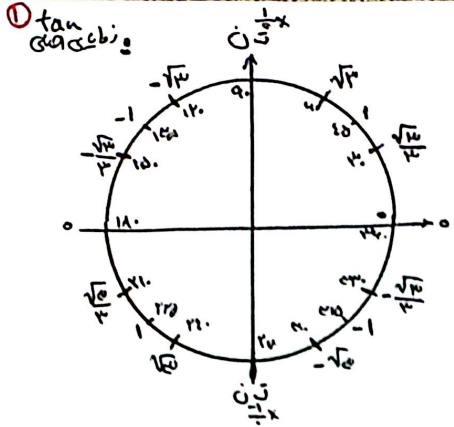




الف) $y = \sqrt{\frac{(n-c)(n+r)}{A^2 - 13A + 4c}} \Rightarrow \sqrt{\frac{(n^2-c)(n^2+r)}{(A-z)(A-q)}}$

$A = n^2 \Rightarrow n = \pm 1, \pm \sqrt{}$

$D_f = (-\infty, -\sqrt{2}) \cup (\sqrt{2}, \infty)$

ب) $y = \sqrt{\frac{n^2 - 2n^2 - 2n + 4}{n^2 + 2n^2 - 2n - 4}} \xrightarrow{\pm n-1} \frac{n-1}{n^2 - n - 4}$

$\Rightarrow \sqrt{\frac{(n-1)(n^2-c)(n^2+r)}{(n+1)(n^2-c)(n^2+r)}} \Rightarrow \frac{-\sqrt{2}}{+} + \frac{-\sqrt{2}}{+} + \frac{-\sqrt{2}}{+} + \frac{-\sqrt{2}}{+} +$

$\Rightarrow D_f = (-\infty, -\sqrt{2}) \cup [-\sqrt{2}, -1] \cup [1, \sqrt{2}] \cup [\sqrt{2}, +\infty)$

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

ب) $-\left(-\frac{\sqrt{2}}{2}\right) + \frac{\sqrt{2}}{2} - \sqrt{2} \times \left(-\frac{\sqrt{2}}{2}\right) = \frac{1}{\sqrt{2}}$

ج) $-\frac{\sqrt{2}}{2} + \sqrt{2} \times \frac{\sqrt{2}}{2} - \sqrt{2} \times \left(-\frac{\sqrt{2}}{2}\right) = \frac{1}{\sqrt{2}}$

د) $\cos 0 + \sin \frac{\pi}{4} = 1 + 1 = 2$

الف) $\sqrt[n]{n} - \epsilon > 0 \Rightarrow \sqrt[n]{n} > \epsilon \Rightarrow [n] > \epsilon \Rightarrow D_f = [\epsilon, +\infty)$

ب) $\sqrt[n]{n} - 0 > 0 \Rightarrow [n] > 0 \Rightarrow [n] > 0 \Rightarrow D_f = [0, +\infty)$

الف) $f(n) = \begin{cases} n^2 + 2n & n \geq a \\ n^2 + a + 2 & n < a \end{cases}$

$a = -1$

$n = a \Rightarrow a^2 + 2a = a^2 + a + 2 \Rightarrow a^2 + a - 2 = 0$

$(a+2)(a-1) = 0 \Rightarrow a = -2, 1$

$(a > -) \Rightarrow a = 1$

$f(1) = 1^2 + 2 \times 1 = 1 + 2 = 3$

الف) $\sqrt{\frac{n+1}{|n-c|}} \Rightarrow \frac{n+1}{|n-c|} > 0 \Rightarrow [-1, +\infty) - \{c\}$

$\sqrt{\frac{4-n}{n^2 + 2n + 2}} \Rightarrow \frac{4-n}{n^2 + 2n + 2} > 0 \Rightarrow (-\infty, 4]$

ب) $\sqrt[n]{n} - 2 > 0 \Rightarrow \sqrt[n]{n} > 2 \Rightarrow D_f = [2, +\infty)$

$\sqrt[n]{n} - 0 > 0 \Rightarrow [n] > 0 \Rightarrow D_f = (-\infty, c)$

$\Rightarrow D_f = \emptyset$

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

$a + b = 9$

$n+1 \geq 2 \Rightarrow n \geq 1 \Rightarrow 1^2 - b = a + 2 \Rightarrow b = a$

$n+1 \leq -2 \Rightarrow n \leq -3 \Rightarrow (-3)^2 - b = a + 2(-3) \Rightarrow 9 - b = a - 6 \Rightarrow b = a + 15$

$a + b = 9 \Rightarrow a + a + 15 = 9 \Rightarrow 2a = -6 \Rightarrow a = -3, b = 6$

مدرس عابد بنوي

الف) $\frac{n^2 - 2n^2 + 0}{n^2(n-2) + 0} = \frac{-n^2}{n^2(n-2)} = \frac{-1}{n-2} \Rightarrow D_f = \mathbb{R} - \{2\}$

ب) $2n^2 + 2n^2 + 2n + 2 \neq 0$

$\Rightarrow 4n^2 + 2n + 2 \neq 0 \Rightarrow (2n+1)^2 + 1 \neq 0$

$\Rightarrow D_f = \mathbb{R} - \{-\frac{1}{2}\}$

الف) $n^2 - 1 > 0 \Rightarrow n > 1, n < -1$

$n - 2 > 0 \Rightarrow n > 2$

$D_f = [2, +\infty)$

ب) $4 - 2n > 0 \Rightarrow n < 2$

$4n - 3 > 0 \Rightarrow n > \frac{3}{4}$

$\Rightarrow D_f = \left(\frac{3}{4}, 2\right]$

الف) $4n - a > 0 \Rightarrow 4a - a = 0 \Rightarrow a = 12$

$b - 4 > 0 \Rightarrow b = 4$

$\frac{b}{a} = \frac{4}{12} = \frac{1}{3}$