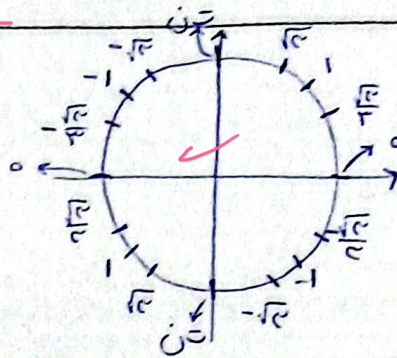


(اعداد دور دایره تناوب را روی ماشین حساب)



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

ب) $B = -(-\frac{\sqrt{3}}{1}) + \frac{\sqrt{2}}{1} - 3(-\frac{\sqrt{3}}{1}) = \boxed{\frac{5\sqrt{3}}{1}}$

ج) $C = -\frac{\sqrt{2}}{1} + 2\frac{\sqrt{2}}{1} - 2(-\frac{\sqrt{2}}{1}) = \boxed{\frac{4\sqrt{2}}{1}}$

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

$x = a$ در مورد رابطه جواب یکسان می ده
 $a^2 + 3a = 3a + 2 \Rightarrow a^2 + a - 2 = 0 \Rightarrow a = \begin{cases} +1 \\ -2 \end{cases} \xrightarrow{a > 0} \boxed{a = 1}$

$f(1) = (1)^2 + 3 \cdot 1 = \boxed{4}$ پاسخ

$f(x) = \begin{cases} x^2 + b & x \leq -2 \\ 2x + a & -2 < x < -1 \end{cases}$

$x = -2 \Rightarrow 1a + b = -4 + a \Rightarrow a + b = \boxed{-4}$ پاسخ

الف) $x^2 - 4x \neq 0 \Rightarrow x(x - 4) \neq 0 \Rightarrow x \neq 0, 4 \Rightarrow D_f = \mathbb{R} - \{0, 4\}$

ب) $2x^2 + 4x^2 + 2x + 4 \neq 0 \Rightarrow (x^2 + 1)(2x + 4) \neq 0 \Rightarrow x \neq -2$
 $\Rightarrow D_f = \mathbb{R} - \{-2\}$

الف) $x^2 - 1 \geq 0 \Rightarrow x^2 \geq 1 \Rightarrow x \geq 1 \cup x \leq -1$ $x - 2 \geq 0 \Rightarrow x \geq 2$
 $\Rightarrow D_f = [2, +\infty)$

ب) $4 - 5x \geq 0 \Rightarrow x \leq \frac{4}{5}$ $4x - 5 > 0 \Rightarrow x > \frac{5}{4}$
 $\Rightarrow D_f = (\frac{5}{4}, \frac{4}{5}]$

$a \leq b \cap 4x \geq a \Rightarrow x \leq \frac{b}{4} \cap x \geq \frac{a}{4}$
 بازه یک عدد است $\Rightarrow \frac{b}{4} = \frac{a}{4} \Rightarrow \frac{b}{a} = 1$

الف) $y = \sqrt{\frac{(x-2)(x-3)}{(x^2-1)(x^2-4)}} = \sqrt{\frac{(x-2)(x-3)}{(x^2-1)(x^2-4)}}$
 $\Rightarrow D_f = (-\infty, -2) \cup (2, 3) \cup (3, +\infty)$

ب) $y = \sqrt{\frac{(x-1)(x^2-x-4)}{(x+1)(x^2+x-4)}} = \sqrt{\frac{(x-1)(x-2)(x+2)}{(x+1)(x+2)(x-2)}}$
 $\Rightarrow D_f = (-\infty, -2) \cup [2, -1) \cup (1, 2) \cup [2, +\infty)$

الف) $2[x] - 4 \geq 0 \Rightarrow [x] \geq 2 \Rightarrow x \geq 2 \Rightarrow D_f = [2, +\infty)$

ب) $2[x] - 5 \geq 0 \Rightarrow [x] \geq 2,5 \Rightarrow x \geq 3 \Rightarrow D_f = [3, +\infty)$

الف) $y = \sqrt{\frac{x+1}{x-1}} + \sqrt{\frac{4-x}{x^2+x+4}}$ $\{x \leq 4\} A$ $\frac{-1}{-1} + \frac{4}{4} + \Rightarrow \{x \geq -1 - \{4\}\} B$
 $\Rightarrow D_f = [-1, 4] \cup (4, 4]$

ب) $y = \sqrt{[x]-4} + \sqrt{2-[x]}$ $[x] \geq 4 \Rightarrow x \geq 4 A$
 $[x] \leq 2 \Rightarrow x < 3 B$
 $A \cap B = \emptyset \Rightarrow D_f = \emptyset$