

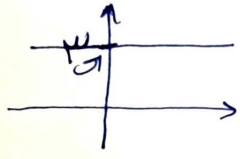
19, 25

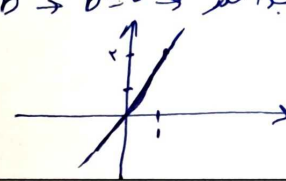
الف) $y^3 - x = 2x^2 \rightarrow y_1^3 = 2x_1^2 + x_1$ $\left. \begin{matrix} y_1^3 = 2x_1^2 + x_1 \\ y_2^3 = 2x_2^2 + x_2 \end{matrix} \right\} \xrightarrow{\text{if } x_1 = x_2} 2x_1^2 + x_1 = 2x_2^2 + x_2 \rightarrow y_1^3 = y_2^3 \rightarrow y_1 = y_2$ تابع است

ب) $|x + x^2| = x + 3 \rightarrow |y_1| = -x_1^2 + x_1 + 3$ $\left. \begin{matrix} |y_1| = -x_1^2 + x_1 + 3 \\ |y_2| = -x_2^2 + x_2 + 3 \end{matrix} \right\} \xrightarrow{\text{if } x_1 = x_2} -x_1^2 + x_1 + 3 = -x_2^2 + x_2 + 3 \rightarrow |y_1| = |y_2| \rightarrow y_1 = \pm y_2$ تابع نیست

ج) $\sqrt{x-2} + |y-2| = 0 \rightarrow x=2 \text{ و } y=2$ $\left. \begin{matrix} \sqrt{x-2} + |y-2| = 0 \\ \sqrt{x-2} + |y-2| = 0 \end{matrix} \right\} \rightarrow$ وقتی مجموع ۲ عبارت منفی شود $\rightarrow$ تابع است
هر عبارت برابر با منفی است

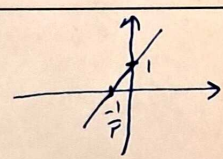
د) $x = \cos y \rightarrow x=0 \rightarrow y = \frac{\pi}{2} \text{ و } -\frac{\pi}{2}$ تابع نیست

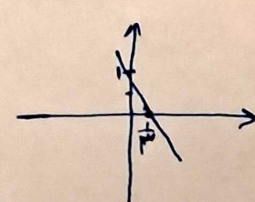
الف) $y = x \rightarrow y = x$ 

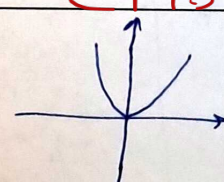
ب) $y = ax + b$ $\rightarrow 2 = 2x + b \rightarrow b = 0$ $\rightarrow$ مبدأ افتاد است $\rightarrow$ $y = 2x$ 

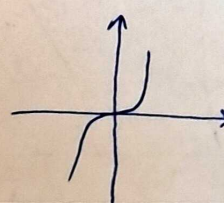
الف) تابع هانی $y = x$
 $y = ax + b \rightarrow \left. \begin{matrix} b=0 \\ a=1 \end{matrix} \right\} \rightarrow 2b + a = 2x + 1 = 1$

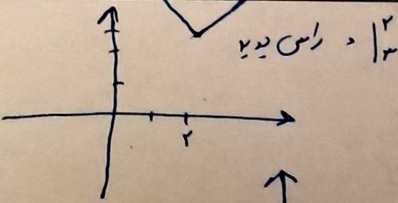
ب) $y = x^2 + ax + b$ $a = -2$
 $2 = 1^2 + (-2)(1) + b \rightarrow b = 3$
 $a + 2b = -2 + 6 = 4$
 $1 = (2)^2 - 2(2) + b \rightarrow b = 1$
 $a + 2b = -2 + 2 = 0$

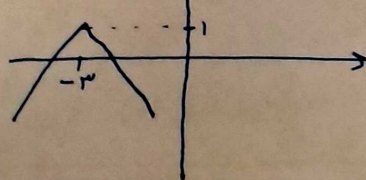
الف) $y = 2x + 1$ 

ب) $y = -3x + 1$ 

ج) $y = x^2$ 

د) $y = x^3$ 

الف) $|x| + 2$ 

ب) $|x| - 3$ 

$$\text{الف) } \frac{n+4}{n^2-4n} = \frac{n+4}{n(n-4)} \rightarrow \text{IR} - \{0, 4\} = D_f$$

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$$\text{ب) } y = \frac{n+4}{n^2-4n+4} = \frac{n+4}{(n-2)^2} \rightarrow \text{IR} = D_f$$

مخرج صفر نمی شود
چون Δ منفی می شود

$$\text{ج) } y = \frac{n+4}{n^2+4n+4} = \frac{n+4}{(n+2)^2} \rightarrow D_f = \text{IR}$$

مخرج صفر نمی شود

$$\text{د) } \frac{n+4}{n^2-4n} = \frac{n+4}{n(n-4)} \rightarrow D_f = \text{IR} - \{-2, 0, 2\}$$

اینجا $= 0$ و -2 و 2

$$\text{الف) } y = \sqrt{4-n} + \sqrt{n-2} \rightarrow \begin{cases} 4-n \geq 0 \\ n \leq 4 \end{cases} \quad \begin{cases} n-2 \geq 0 \\ n \geq 2 \end{cases} \rightarrow D_f = [2, 4]$$

$$\text{ب) } y = \frac{3n+1}{n^2+1} \rightarrow D_f = \text{IR}$$

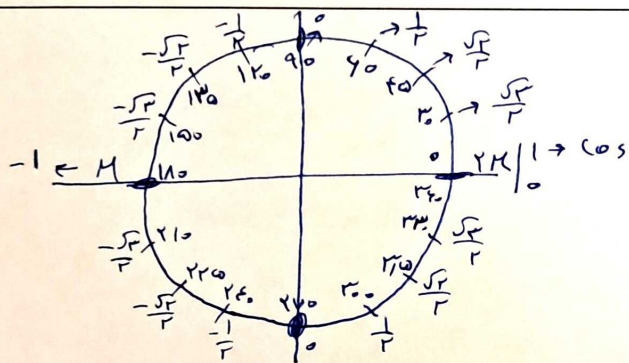
مخرج همیشه مخالف صفر است

$$\text{ج) } y = \frac{\sqrt{n-2}}{n-4} \rightarrow \begin{cases} n-2 \geq 0 \\ n \geq 2 \end{cases} \rightarrow D_f = [2, 4) \cup (4, +\infty)$$

$n \neq 4$

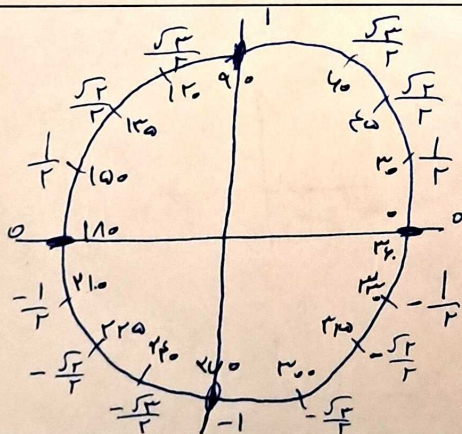
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$$\text{د) } y = \frac{2n+3}{|n|+n^2} \rightarrow D_f = \text{IR} - \{0\}$$



اعداد کنار دایره که بیرونش هستند cos است

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اعداد بیرون دایره که بیرونش هستند sin است

5

$$\text{الف) } \frac{2\pi}{3} \rightarrow 120^\circ \rightarrow \begin{cases} \frac{-1}{2} = \cos \\ \frac{\sqrt{3}}{2} = \sin \end{cases} \xrightarrow{\text{قرینه}} \frac{1}{2} \rightarrow \text{زاویه ها} = \frac{\pi}{6} \text{ و } \frac{5\pi}{6}$$

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$$\text{ب) } \frac{11\pi}{6} \rightarrow 330^\circ \rightarrow \begin{cases} \frac{\sqrt{3}}{2} = \cos \\ -\frac{1}{2} = \sin \end{cases} \xrightarrow{\text{قرینه}} \frac{-\sqrt{3}}{2} \rightarrow \text{زاویه ها} = \frac{4\pi}{3} \text{ و } \frac{5\pi}{3}$$

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