

$\begin{cases} n=4 \\ P+Y=-9 \rightarrow P=-11 \rightarrow m=-10 \end{cases} \begin{cases} f(1)=4+4-10+4-4_0=-31 \\ f(0)=1+1-4_0=-31 \end{cases} \quad \checkmark \text{ برابرند}$   
 $\begin{cases} n=-9 \\ P+Y=4 \rightarrow P=2 \rightarrow m=-1 \end{cases} \begin{cases} f(1)=4+4-1-9+9=7 \\ f(0)=1+1+0+0+9=11 \end{cases} \quad \times$   
 $\rightarrow P+k=-1 \rightarrow k=11-1=10 \rightarrow m+n+P+k=-10+4-11+10=-7$

$$\frac{n-2}{n^2-2n-1} = \frac{n-2}{(n-1)^2-9} = \frac{n-2}{[n-1+3][n-1-3]} = \frac{(n-2)}{(n+2)(n-4)(n-2)} \geq 0 \quad (\text{الف})$$

$$\frac{-2}{-3+3} + \frac{2}{3} = \frac{2}{3} \Rightarrow D = (-2, +\infty)$$

$$f_Y[-n] \neq 0 \Rightarrow [-n] \in Y \Rightarrow D_f = \mathbb{R} - [-Y, -1) \quad (c)$$

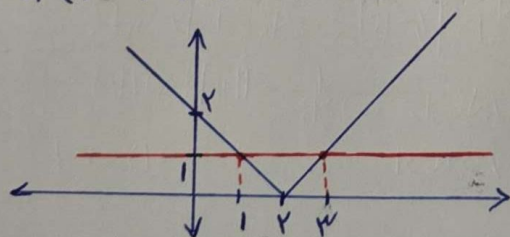
$$\left. \begin{aligned} n(n^2-1) \geq 0 &\rightarrow \frac{-1 \quad 0 \quad 1}{- \quad + \quad - \quad +} \rightarrow n \in [-1, 0] \cup [1, +\infty) \\ |n| + n > 0 &\rightarrow \begin{cases} n \leq 0: 0 \\ n > 0: 2n \end{cases} \rightarrow n \in (0, +\infty) \end{aligned} \right\} \xrightarrow{\text{استراک}} D_f = [1, +\infty) \quad (\text{الف})$$

$$|x-y|-x^y \geq 0 \rightarrow \begin{cases} x \geq y: x^y - x + y \leq 0 \rightarrow \text{convex} + \text{concave} \rightarrow x \notin [y, +\infty) \\ x < y: x^y + x - y \leq 0 \rightarrow \frac{-y}{x^y} \leq -1 \rightarrow x \in [y, 1] \end{cases}$$

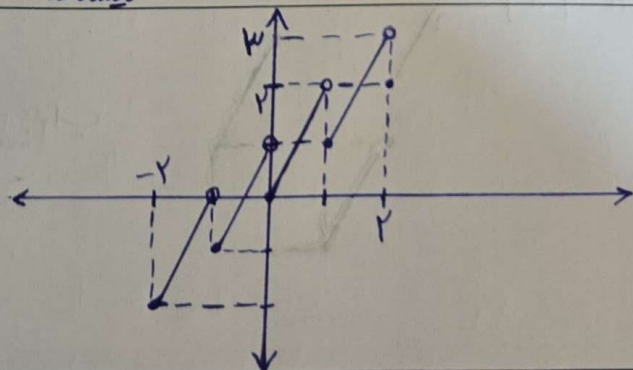
وضعیت مغف کسر:

$$\begin{cases} |n-2| \geq 1 \rightarrow x \leq 1 \vee 3 \leq x : |n-2| \neq k+1 \\ |n-2| < 1 \rightarrow 1 < x < 3 : |n-2| \neq 1-k \end{cases}$$

$\rightarrow k=1$



اگر  $k=1$  باشد در دامنه ضابطه اول ۲ مقدار  
صفر و ۴ بدست می آید و در دامنه ضابطه دوم  
عدد ۲ بدست می آید که این سه شامل دامنه اصلی  
نمی‌شوند.



$$\frac{(n-1)(n-2)}{(n+1)} = n-b$$

$$\left\{ \begin{array}{l} \alpha = -1 \rightarrow \frac{(n-1)(n-2)}{(n-1)} = n-2 = n-b \rightarrow b=2 \Rightarrow \alpha-b = -3 \\ \alpha = -2 \rightarrow \frac{(n-1)(n-2)}{(n-2)} = n-1 = n-b \rightarrow b=1 \Rightarrow \alpha-b = -3 \end{array} \right\} \alpha-b = -3$$

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

تابع  $f$  بالمتغير  $x$  :

$$\begin{aligned} f(1) &= \frac{\alpha+2}{1+b} = 2 \Rightarrow 2+2b = \alpha+2 \\ f(-1) &= \frac{2-\alpha}{b-1} = 1 \Rightarrow b-1 = 2-\alpha \end{aligned} \Rightarrow \left\{ \begin{array}{l} 2+2b = \alpha+2 \\ 2b-1 = 2-\alpha \end{array} \right\} \rightarrow 2b+2 = 4 \rightarrow b=1$$

$$\Rightarrow b+c = 2 + \frac{1}{2} = \frac{5}{2}$$

$$D_f \cap D_g = \{1\} \rightarrow D_f \cap D_g = \{1\} \Rightarrow \left\{ \begin{array}{l} b-2n \geq 0 \rightarrow \frac{b}{2} \geq n \rightarrow b=2 \\ 2n-2\alpha \geq 0 \rightarrow n \geq \frac{2}{2}\alpha \rightarrow \alpha=1 \end{array} \right.$$

$$2f-g(1) = 2\sqrt{2-2} + 2k-2-\sqrt{2-2} - 2k = -k-2 = k \rightarrow k=-1$$

$$\Rightarrow 2\alpha - \frac{b}{2} - k = 2-2+1=1$$

$$\underbrace{m-n \geq 0}_{D_f} \rightarrow m \geq n \rightarrow m=V$$

$$\Leftarrow D_f \cap D_g = D_{f \times g}$$

$$f-g(2) = \sqrt{2-2} + n - 2\sqrt{2} = n+2-2\sqrt{2} = 2\sqrt{2} \Rightarrow n = 2\sqrt{2}-2$$

$$m+n = V + 2\sqrt{2}-2 = \alpha + 2\sqrt{2}$$

$$y = x - [x] = \frac{1}{2}$$

