

19, 10

A possible answer

$$R_{x-f} = (a^2 - f_0 + \infty)$$

$$R_{12-10} = (-\infty, 12-10]$$

$$\left. \begin{aligned} R_{x-f} &= (a^2 - f_0 + \infty) \\ R_{12-10} &= (-\infty, 12-10] \end{aligned} \right\} \begin{aligned} &12-10 \sqrt{a^2 - f_0} \rightarrow \frac{a^2 - 12a + 16}{-a^2 + 12a} \cdot \frac{a-1}{a^2 + 12a - 1} \\ &\frac{2a^2 - 12a}{-2a^2 + 12a} \cdot \frac{-12a + 16}{12a - 16} \\ &\frac{-12a + 16}{12a - 16} \end{aligned}$$

$$(a-1)(a+1)(a-1) \geq 0 \quad \frac{-1}{-1+1+1}$$

$$a = [-f_0 + \infty) \quad \checkmark$$

$$f(f) = 2 \rightarrow 12 + k = 2 \rightarrow k = -10 \rightarrow f(x) = 12x - 10 \rightarrow f(1) = 11 \quad \checkmark$$

$$f(f(x)) = 12(12x - 10) - 10 = 144x - 130 = 144x - 10 \quad \checkmark$$

$$y = \frac{a^n}{n-1} \rightarrow yn - y = a^n \rightarrow yn - a^n = y \rightarrow n(y - a) = y \rightarrow n = \frac{y}{y-a} \rightarrow f(n) = \frac{n}{n-a} \quad \checkmark$$

$$a = \frac{12a}{12a - a} \rightarrow a = \frac{12a}{11a} \rightarrow a^2 - 12a = 0 \rightarrow a(a-12) = 0 \rightarrow a = 0 \rightarrow f(a) = 0 \rightarrow a = 12 \quad \checkmark$$

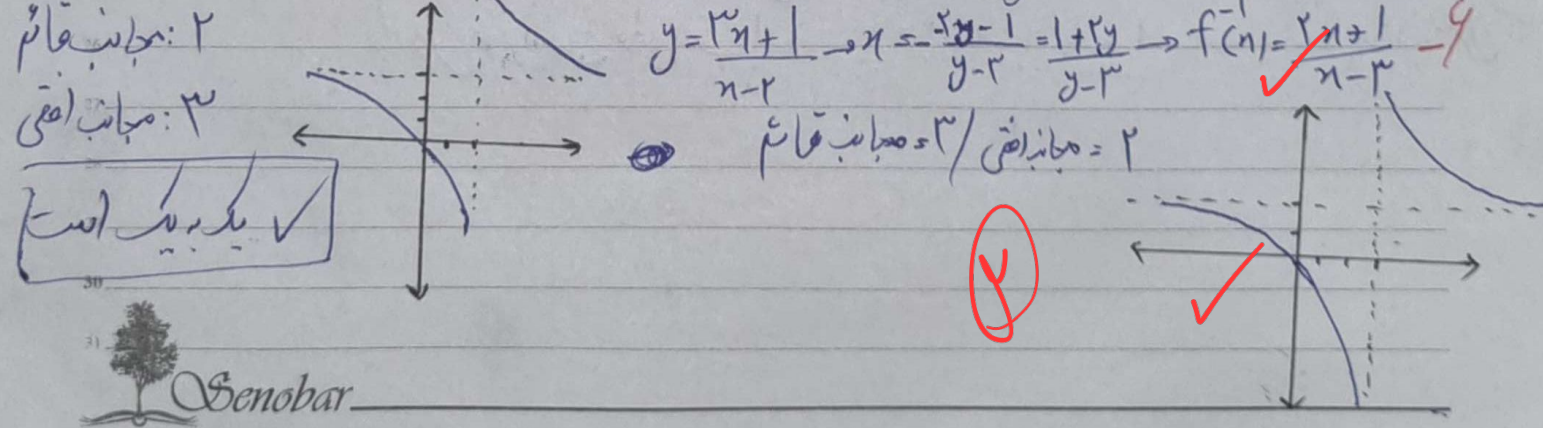
$$f \rightarrow 12 \rightarrow 12/11 \rightarrow 1 \rightarrow 1/11 \rightarrow 11 \rightarrow 11/11 \rightarrow 1 \rightarrow f \circ f = \{(12, 12)(11, 11)(1, 1)(11, 1)\} \quad \checkmark$$

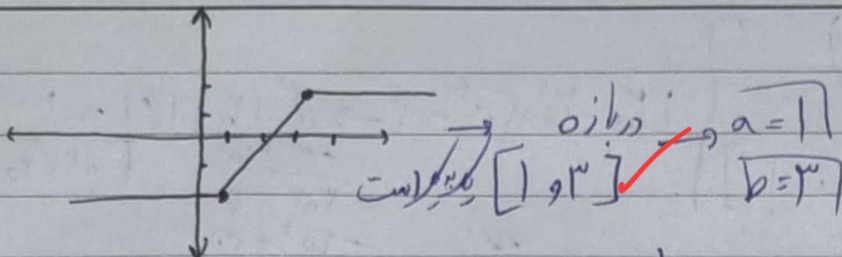
$$f \rightarrow 12 \rightarrow 12/11 \rightarrow 1 \rightarrow 1/11 \rightarrow 11 \rightarrow 11/11 \rightarrow 1 \rightarrow f \circ f = \{(12, 12)(11, 11)(1, 1)(11, 1)\} \quad \checkmark$$

$$f \rightarrow 12 \rightarrow 12/11 \rightarrow 1 \rightarrow 1/11 \rightarrow 11 \rightarrow 11/11 \rightarrow 1 \rightarrow f \circ g = \{(12, 12)(11, 11)(1, 1)(11, 1)\} \quad \checkmark$$

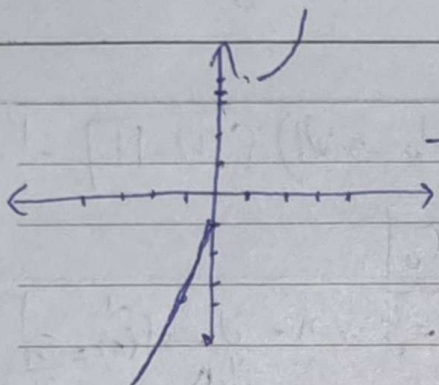
$$f \rightarrow 12 \rightarrow 12/11 \rightarrow 1 \rightarrow 1/11 \rightarrow 11 \rightarrow 11/11 \rightarrow 1 \rightarrow g \circ f = \{(12, 12)(11, 11)(1, 1)(11, 1)\} \quad \checkmark$$

$$f \rightarrow 12 \rightarrow 12/11 \rightarrow 1 \rightarrow 1/11 \rightarrow 11 \rightarrow 11/11 \rightarrow 1 \rightarrow f \circ g = \{(12, 12)(11, 11)(1, 1)(11, 1)\} \quad \checkmark$$





$$1 \sqrt{n} \sqrt{r} \rightarrow n-1+n-r=rn-r \rightarrow f^{-1}(n) = \frac{n+r}{r} = \frac{1}{r}n + 1 \rightarrow \begin{cases} D_{f^{-1}} = [-1, r] \end{cases}$$



کریه کریمت و

$\begin{cases} \sqrt[n]{n-f} & n \geq w \rightarrow R_f = D_{f-1} \\ \frac{n+1}{f} & n \leq -1 \end{cases}$

$$\frac{n^r - n^r + n^r + n + 1}{n + r} = \frac{n^r + n^r - n^r - n^r - n^r - 1}{n + r} = \frac{-n^r - 1}{n + r} \rightarrow g_n = \frac{r y + 1}{y + r} = \frac{-r y_{is} - 1}{y + r}$$

$$\rightarrow f^{-1}(x) = \frac{-r x - 1}{x + r} = \frac{-y x - r}{r x + y} \rightarrow a = -y / b = -r / d = y \rightarrow f^{-1}(-r) = \frac{-y - 1}{-r + r} = \omega$$

۱۵) تابع یک به یک نیست زیرا: $n = \frac{1}{4} \rightarrow y = \frac{4}{15}$ و $n = 4 \rightarrow y = \frac{4}{15}$ مثل مثال قبض

(Tubular) ~~scribble~~ - scribbles

$$y n^2 - n + y = 0 \rightarrow n = \frac{1 \pm \sqrt{1 - 4 y^2}}{2 y} \rightarrow y = \frac{1 \pm \sqrt{1 - 4 n^2}}{2 n}$$

واریانس و کواریانس $\rightarrow \frac{1 + \sqrt{1 - \rho_n^2}}{2n} \rightarrow$ مفنی عامل قبول شد
 $\checkmark$ $\frac{1}{2} \leq |\rho_n|$

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