

الف) $\frac{n-1}{n} - \frac{n}{n-1} > 0 \rightarrow \frac{(n-1)^2 - n^2}{n(n-1)} > 0$ (۱)

صورت $n^2 - 2n + 1 - n^2 = -2n + 1 \rightarrow \frac{1-2n}{n(n-1)} > 0 \rightarrow 1 = 2n \rightarrow n = 1/2$
 $\frac{0}{+} \frac{1/2}{-} \frac{1}{+}$
 $\rightarrow (-\infty, 0) \cup [1/2, 1)$ (۲)

ب) $\frac{2}{n-1} + \frac{1}{n+2} \neq 0$ (I) $\checkmark$
 $\rightarrow n \neq -2$
 II $\frac{1}{n+1} - \frac{2}{n}$
 $\checkmark$ $\rightarrow n \neq -1$ $\checkmark$ $\rightarrow n \neq 0$

III $\rightarrow \frac{2(n+2) + n - 1}{(n-1)(n+2)} \neq 0 \rightarrow n+5 \rightarrow n \neq -5$
 $\rightarrow n \neq -5$ (۱۰)

$\rightarrow R = \{ -2, -5/2, -1, 0, 1 \}$

الف) $((1/4)^n - 9)(32 - 4^n) > 0$ (۲)
 $\rightarrow 32 - 4^n = 0 \rightarrow 32 = 4^n \rightarrow (2^5 = 2^{2n})$
 $\rightarrow n = 5/2$

$(1/4)^n - 9 = 0 \rightarrow (1/4)^n = 9 \rightarrow n = -2$
 $\frac{-2}{+} \frac{5/2}{-}$
 $\rightarrow (-\infty, -2] \cup [5/2, +\infty)$

ب) $n-1 > 0 \rightarrow n > 1$ (I)
 $y+1 > 0 \rightarrow y > -1$
 $n \rightarrow [1, \infty)$ (۲۰)

$\rightarrow -2\sqrt{n-1} + 3 = \sqrt{y+1}$

$\rightarrow 3 - \sqrt{n-1} > 0 \rightarrow 3 > \sqrt{n-1} \rightarrow n-1 < 9 \rightarrow n < 10$ (I)
 $n < 10$

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$$(n) \quad \frac{1}{1-x} + \frac{b}{1-x} + \frac{a}{1-x} = \frac{1+b+a}{1-x}$$

$$(n) \quad \frac{1}{1-x} = \frac{1}{1-x} + \frac{b}{1-x} + \frac{a}{1-x}$$

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$$f(a) = \frac{a+1}{a-1}$$

$$\rightarrow f(f(a)) = \frac{\frac{a+1}{a-1} + 1}{\frac{a+1}{a-1} - 1}$$

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$$\Rightarrow \frac{a+1+a-1}{a-1} = \frac{2a}{a-1}$$

$$\frac{2a}{a-1}$$

$$= a+1-a+1$$

$$\frac{a+1}{a-1} - 1$$

$$\frac{a+1}{a-1}$$

$$\frac{2}{a-1}$$

$$a-1 \neq 0 \rightarrow a \neq 1$$

$$\frac{2a}{a-1}$$

$$+ \frac{a-1}{2}$$

$$= (a)$$

$$\rightarrow f(f(a)) = a$$

$$D \rightarrow R - \{1\}$$

$$f(g(a)) = -f$$

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$$g(a) = t$$

$$\rightarrow f(t) = -f$$

$$\rightarrow t - f + t = -f$$

$$t - f + t + f = 0$$

$$2g(a) = 2t$$

$$\rightarrow \sqrt{a^2 - 1} = t$$

$$\sqrt{a^2 - 1} = t$$

$$(t - f)^2 = 0$$

$$\rightarrow t = f$$

$$a^2 - 1 = f^2 \rightarrow a^2 = 1 + f^2$$

$$\rightarrow a = \pm \sqrt{1 + f^2}$$

$$a + f = 1 \rightarrow a = 1$$

$$\rightarrow f(1) = 1 - 1 + f = f$$

$$f(1) = 1 - 1 + f = f$$

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$$a + f = -f \rightarrow a = -f$$

$$\rightarrow f(-f) = 1 - (-f) + f = 1 + f$$

$$f(-f) = 1 + f$$

$$f(-f) = 1 + f$$

$$1 + f + f = 1 + 2f$$

$$f \cos \theta + a \cos \theta = \frac{1}{2} a$$

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$$\cos \theta = t$$

$$\rightarrow t + f + a + t = \frac{1}{2} a$$

$$\frac{1}{2} a$$

$$1 + f + 1 + t = \frac{1}{2} a$$

$$a = 1 \rightarrow f(1) = 1 + f$$

$$1 + f$$

MAHAN

$$\rightarrow n = \frac{-1 \pm 11}{14}$$

$$\rightarrow \frac{1}{2} a \rightarrow \sqrt{1 + f^2} = 1$$

$$\rightarrow -1/2 \leq x \leq 1/2$$

$$\rightarrow \sqrt{1 + f^2} = 1$$

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$$f(r, a) = \tan(n)^r \rightarrow \frac{1 - \cos n^r}{\cos n^r} \quad \cos n = 1/a$$

$$\Rightarrow \frac{1 - \cancel{\cos n}^r}{1/a^r} \quad 1/r = r/r \times r = (r) \rightarrow \tan n^r$$

$\rightarrow f(r, a)$

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