

$$y = (n - P[P])^P = (P \times \frac{n}{P} - P[P])^P = [P(\frac{n}{P} - [P])]^P \quad (1)$$

$$\rightarrow 0 < \frac{n}{P} - [P] < 1 \xrightarrow{P} 0 < P(\frac{n}{P} - [P]) < P \xrightarrow{P} 0 < [P(\frac{n}{P} - [P])]^P < P^P$$

$$R_P = [0, P^P)$$

$$y) -\sin x + \log y - K = 0 \Rightarrow \log y = K + \sin x \Rightarrow y = 10^{K + \sin x}$$

$$\sin = -1 \rightarrow y = 10^{-K}$$

$$\sin = 1 \rightarrow y = 10^{K+1}$$

$$R_P = [10^{-K}, 10^{K+1}]$$

$$f(x) = \sqrt{\frac{x^P - K}{n - a}}$$

$$\frac{x^P - K}{n - a} \xrightarrow{n=0} \frac{0 - K}{0 - a} = \frac{K}{a}$$

$$x^P = +\infty$$

$$\frac{+\infty}{+\infty} = 1$$

$$R_P = \sqrt{(-\infty, \frac{K}{a}] \cup (1, +\infty)} = [-\infty, \frac{K}{a}] \cup (1, +\infty)$$

$$a+b+c = 0 + \frac{K}{a} + 1 = \frac{K}{a} + 1$$

$$15) f(x) = x + \frac{1}{x} + P \sqrt{x + \frac{1}{x}} \quad \text{چون } x + \frac{1}{x} \geq 2 \quad x + \frac{1}{x} \geq P \quad -1 \leq \sin x \leq 1 \Rightarrow x + \frac{1}{x} \geq P$$

$$x + \frac{1}{x} = P \Rightarrow x + \frac{1}{x} + P \sqrt{x + \frac{1}{x}} = P + P \sqrt{x + \frac{1}{x}}$$

$$R_P = [P + P\sqrt{2}, +\infty)$$

$$y) y = (P - \sin x)(1 + \sin x) = P + P \sin x - \sin x - \sin^2 x = -\sin^2 x + P \sin x + P$$

$$\begin{aligned} -1 - P + P^2 &= 0 \\ -\sin^2 x + P \sin x + P &= 0 \\ -\frac{P}{4} &\downarrow \\ -1 + P + P^2 &= K \end{aligned}$$

$$R_P = [0, K]$$

$$f(x) = -\frac{1}{x} x + 10 \quad x=1 \rightarrow -\frac{1}{1} + 10 = \frac{9}{1}$$

$$x=K \rightarrow -\frac{1}{K} + 10 = \frac{9}{K}$$

$$x=K \rightarrow -\frac{1}{K} + 10 = \frac{9}{K}$$

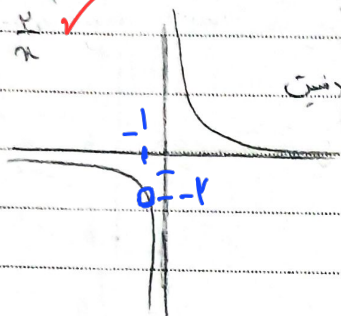
$$x=K \rightarrow -\frac{1}{K} + 10 = \frac{9}{K}$$

$$-\frac{9}{K} + 10 = \frac{9}{K} \Rightarrow 10 = \frac{18}{K} \Rightarrow K = \frac{9}{5}$$

$$\text{حداکثر} = \left(\frac{9}{5} + 10 \right) \times 9 = \frac{100}{5} \times 9 = \frac{900}{5} = 180$$

$$y = \frac{1}{x} + \frac{1}{x+1} + \frac{1}{x^2+x} = \frac{x+1}{x^2+x} + \frac{x}{x^2+x} = \frac{x+1+x}{x^2+x} = \frac{2x+1}{x^2+x} \rightarrow y = \frac{2x+1}{x^2+x} = \frac{2(x+1)}{(x+1)x} = \frac{2}{x}$$

$$y = \frac{2}{x}$$



خبر نیست

$$y = \frac{2}{x} \xrightarrow{x=1} y = \frac{2}{1} = 2$$

خبر نیست

$$P = IR - \{P_2 - P_1\}$$

$$a+b = 0 + (-2) = -2$$

$$10. f(x) = \frac{x - \sqrt{x} + 3}{x - \sqrt{x} + 1} \xrightarrow{\sqrt{x}=t} \frac{t^2 - t + 3}{t^2 - t + 1} = \frac{(t-1)(t-3)}{(t-1)^2} = \frac{t-3}{t-1} = \frac{\sqrt{x}-3}{\sqrt{x}-1}$$

$$\frac{\sqrt{x}-3}{\sqrt{x}-1} \xrightarrow{\sqrt{x}=0} \frac{0-3}{0-1} = 3$$

$$\xrightarrow{\sqrt{x} \rightarrow +\infty} \frac{+\infty}{+\infty} = 1$$

