

نیاسی ساه نظری تکلیف نه دوازدهم فصل A

الف) $f(x) = 2 \sin^2(x + \frac{\pi}{4}) - 1$

① ②

$0 \leq \sin^2(x + \frac{\pi}{4}) \leq 1$

$0 \leq 2 \sin^2(x + \frac{\pi}{4}) \leq 2 \rightarrow -1 \leq 2 \sin^2(x + \frac{\pi}{4}) - 1 \leq 1$

$R_f = [-1, 1]$ ✓

ب) $g(x) = 3 \cos^3 x - 4$

$-1 \leq \cos^3 x \leq 1 \rightarrow -3 \leq 3 \cos^3 x \leq 3 \rightarrow -7 \leq 3 \cos^3 x - 4 \leq -1$

$R_g = [-7, -1]$ ✓

$y = \frac{x}{|x|} + [x] \quad x \in [-2, -1) \rightarrow y = -1 - 1 = -2$

② ③

$x \in [-1, 0) \rightarrow y = -1$

$x \in [0, 1) \rightarrow y = 0$

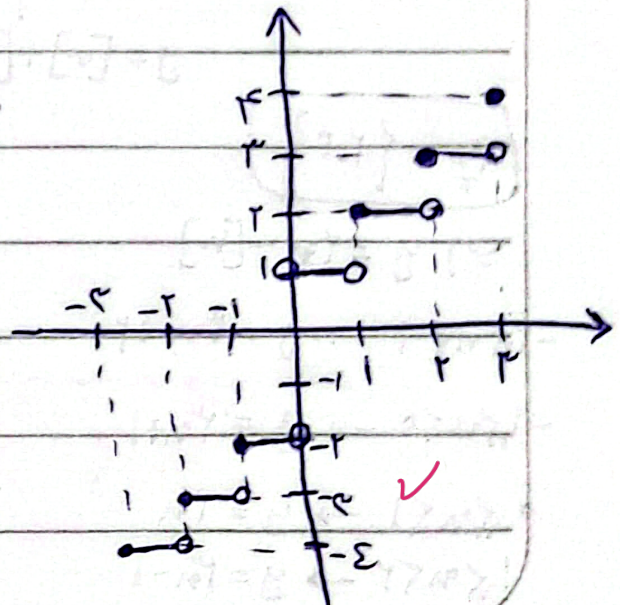
$x = 0 \rightarrow x$

$x \in (0, 1) \rightarrow y = 1$

$x \in [1, 2) \rightarrow y = 2$

$x \in [2, 3) \rightarrow y = 3$

$x \in \{3\} \rightarrow y = 4$





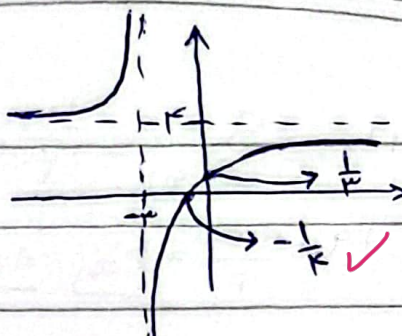
$$y = \left| \frac{rx+1}{x+r} \right| \rightarrow y = \frac{rx+1}{x+r}$$

$$x=0 \rightarrow y = \frac{1}{r}$$

$$y=0 \rightarrow x = -\frac{1}{r}$$

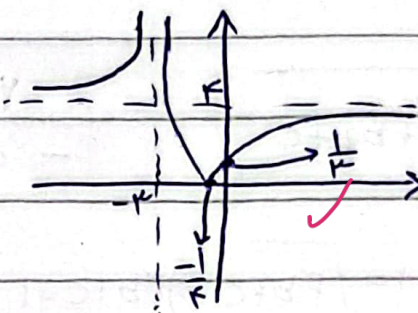


$$y = \left| \frac{rx+1}{x+r} \right|$$



(3)

(2)



(2)

(4)

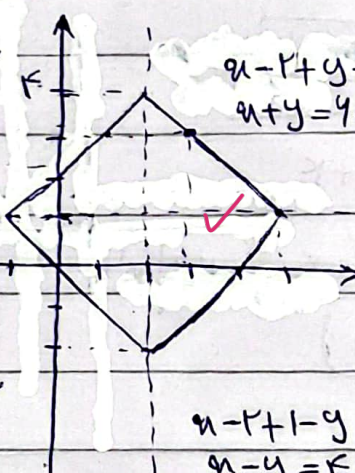
$$r-x+y-1=r$$

$$y-x=r$$

$$y=x+r$$

$$x-r+y-1=r$$

$$x+y=r \rightarrow y=r-x$$



$$r-x+1-y=r$$

$$x+y=0$$

$$y=-x$$

$$x-r+1-y=r$$

$$x-y=r$$

$$y=x-r$$

$$f(x) = x + \frac{1}{x} + r \sqrt{x + \frac{1}{x}}$$

$$\sqrt{x + \frac{1}{x}} = t \rightarrow f(x) = t^2 + r t \rightarrow \frac{-b}{2a} = -1$$

$$t_{\min} = \sqrt{r} \rightarrow f(x) = r + r\sqrt{r}$$

$$R_f = [r + r\sqrt{r}, +\infty)$$

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

$$\sin x \rightarrow 1 \rightarrow -1 + r + r = r$$

$$\sin x \rightarrow -1 \rightarrow -1 - r + r = 0$$

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

$$R_f = [0, r]$$

$$f(n) = -\frac{1}{p}n + 10 \rightarrow S_{f(n)} = -\frac{1}{p}S_n + 10n \quad (2) \quad (4)$$

$$S_n = 1 + p + \dots + 9 = \frac{9 \times 10}{p} = 10 \quad n=9 \Rightarrow S_{f(n)} = -\frac{1}{p} \times 10 + 90 = 90 - 10 = 80 \quad \checkmark$$

$$f(n) = \sqrt{an^2 + bn + c}$$

$$\frac{p}{- \phi +}$$

(2) (4)

بنابر این نتیجه می گیریم

$$f(3) = 1 \rightarrow 1 = \sqrt{9b + c} \rightarrow 9b + c = 1 \quad \checkmark$$

$$f(2) = 0 \rightarrow 0 = \sqrt{4b + c} \rightarrow 4b + c = 0$$

$$\boxed{b=1} \quad \boxed{c=-4}$$

$$g(n) = \sqrt{bn^2 + an - 4c} \rightarrow g(n) = \sqrt{n^2 + 4}$$

$$0 \leq n^2 \rightarrow 4 \leq n^2 + 4 \rightarrow 2 \leq \sqrt{n^2 + 4}$$

$$\boxed{R_g = [2, +\infty)} \quad \checkmark$$

$$f(n) = \frac{n^2 - 4n}{n+2} = \frac{n(n+2)(n-2)}{n+2} = n(n-2) \quad (2) \quad (A)$$

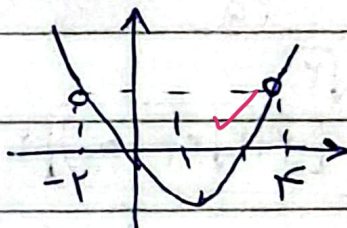
$$n \neq -2 \quad (1)$$

$$n(n-2) \neq 1$$

$$n^2 - 2n - 1 \neq 0 \rightarrow n \neq 1 \quad (2)$$

$$\rightarrow n \neq -2$$

$$\boxed{a, b \rightarrow 2, 4}$$



$$\rightarrow n=1 \rightarrow \boxed{c = n(n-2) = -1} \quad \checkmark$$

$$f\left(\frac{a+b}{p}\right) = f(-1) = n(n-2) = (-1)(-2) = 2 \quad \checkmark$$

⑨ نایج حقی است بنابر این عبارت داخل را در لای توان ۱۳ است.

$$y = \sqrt[n]{(a_n - 1)^{p_n}} \Rightarrow y = \sqrt[n]{a_n \textcircled{-4} b_n \textcircled{+1} p_n - 1} \Rightarrow y = \sqrt[n]{a_n \textcircled{+} a_n \textcircled{+} b_n \textcircled{+} p_n - 1}$$

$$\begin{cases} a = -4 \\ b = 12 \end{cases} \rightarrow -4 \leq x \leq 12$$

$$y = u - r$$

$$-1 \leq a - r \leq 10$$

$$-1.59 \leq 10$$

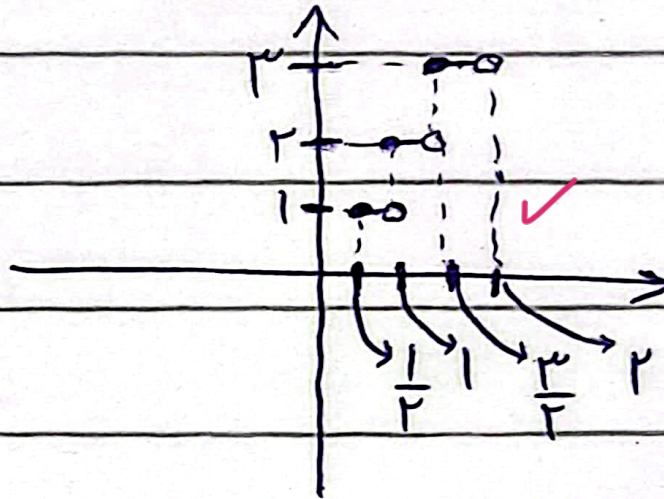
$$R_f = [-\Lambda \check{c} \check{1}_0]$$

$$y = [n] + \left[n + \frac{1}{p}\right]$$

$$-1 \in \left[\frac{1}{f}(1) \right] \rightarrow y = -1$$

$$x \in [1, \frac{p}{r}) \rightarrow y = p$$

$$u \in \left[\frac{r}{r} (r) \right] \rightarrow y = r$$



از سر تا سر، به سر تا سر ✓