

14, 15

SUBJECT:

Year: Month: Day:

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این سوالان یازدهم A تکلیف است

$$n \geq 1 \rightarrow \frac{1}{n-1} = 1 - n + 1 \rightarrow 1 - n + 1 = n^2 - r_{n+1} \rightarrow n^2 - r_n = n(n-r) = 0 \rightarrow r = n \quad (1)$$

$$n < 1 \rightarrow \frac{1}{n-1} = 1 - n \rightarrow -1 = n^2 - r_{n+1} \rightarrow n^2 - r_{n+1} = 0 \rightarrow r = n^2 + 1 \quad (2)$$

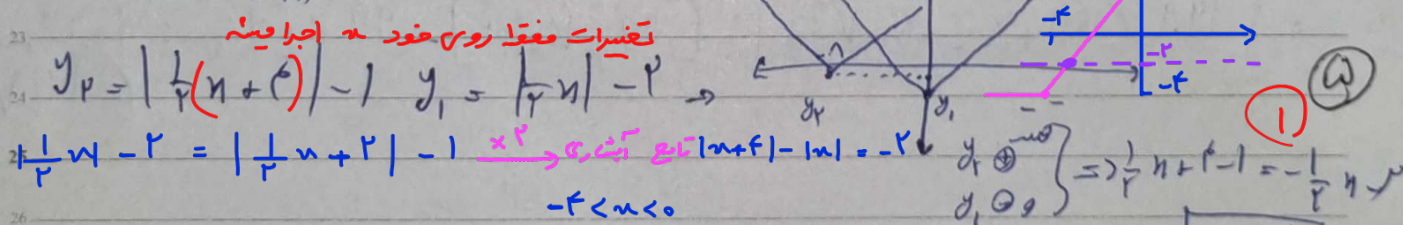
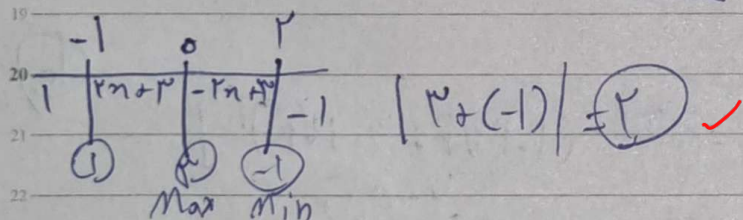
$$c) \left| \frac{r_{n-1}}{n} \right| < r \rightarrow -r < \frac{r_{n-1}}{n} < r \rightarrow -r < r - \frac{1}{n} < r \rightarrow -r < -\frac{1}{n} < 0 \quad (3)$$

$$\rightarrow 0 < \frac{1}{n} < r \rightarrow 0 < 1 < rn \rightarrow \frac{1}{r} < n \quad (4)$$

$$\begin{aligned} \frac{n-r}{r_{n+1}} > 1 &\rightarrow \frac{-n-r}{r_{n+1}} > 0 \rightarrow \frac{-r-1}{-r+1} < -r-1 \rightarrow (-r-1) < (-r+1) \\ \frac{n-r}{r_{n+1}} < -1 &\rightarrow \frac{r_{n-1}}{r_{n+1}} < 0 \rightarrow \frac{-\frac{1}{r}-\frac{1}{r}}{-\frac{1}{r}+\frac{1}{r}} < -\frac{1}{r} < \frac{1}{r} \end{aligned} \Rightarrow n \in (-r, \frac{1}{r})$$

$$\begin{aligned} a-B < n < a+B \quad n^2 < n+4 &\rightarrow n^2 - n - 4 < 0 \rightarrow (n-r)(n+1) < 0 \rightarrow \frac{-r}{-1+1} < \frac{-r}{-1+1} \\ n^2 > -n-4 &\rightarrow n^2 + n + 4 > 0 \rightarrow \Delta < 0, a > 0 \end{aligned} \quad (5)$$

$$\begin{cases} a-B = -r \\ a+B = r \end{cases} \Rightarrow \begin{cases} a=1 \\ a=\frac{1}{r} \end{cases} \quad (6)$$

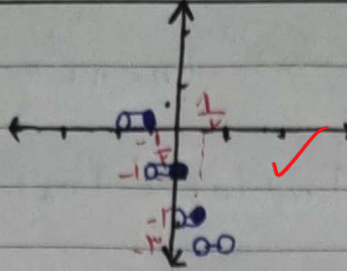


$$\begin{aligned} \frac{1}{r}n - r &= \left| \frac{1}{r}n + r \right| - 1 \quad \text{if } n+r > 0 \\ \frac{1}{r}n - r &= \left| \frac{1}{r}n + r \right| - 1 \quad \text{if } n+r < 0 \end{aligned} \Rightarrow \frac{1}{r}n + r - 1 = -\frac{1}{r}n - r$$

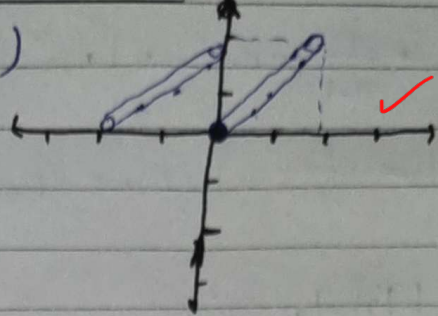
$$R_F = \{ n \mid n \in \mathbb{Z}, n \neq -1 \}$$

$$R = [-1, 0) \quad (7)$$

(الف)



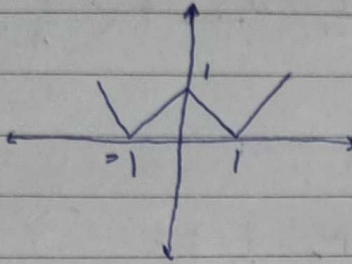
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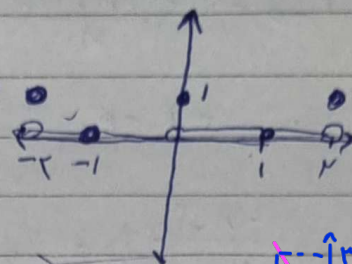
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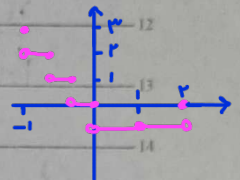
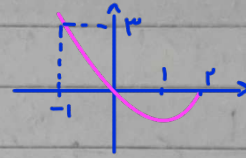
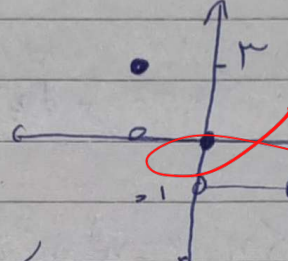
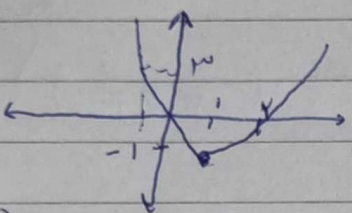
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(2)

(1)

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[b] $\rightarrow$ 2, 4[a] $\rightarrow$ 1, 3

درس و تمرین

 $a = 1, 2 \quad b = 3, 4$ $\rightarrow a + b = 4, 6$

(2)

(9)

$$[(1+\sqrt{2})^4] - [1 - (1-\sqrt{2})^4] = [191 - (1-2\sqrt{2}+4-2\sqrt{2})^2]$$

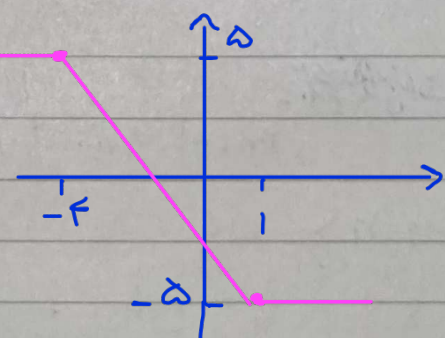
$$= [191 - (49 + 40 - 40\sqrt{2})] = [99 + 40\sqrt{2}] = 99 + [91, \dots] = 190$$

= 190

$$[|n-1| - |n+4|]$$

$$R = \{-5, -4, \dots, 5\}$$

4 الف)



جواب برآورد داده فقط اعداد صحیح