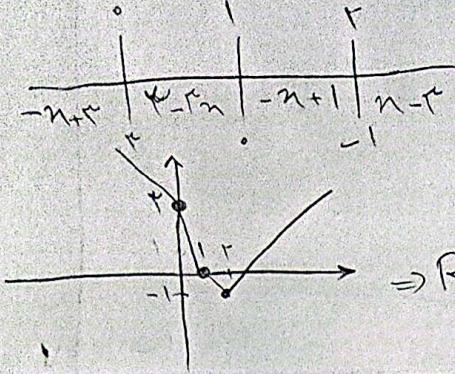


17

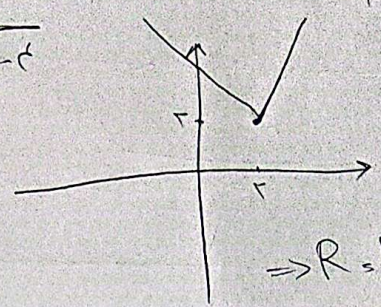
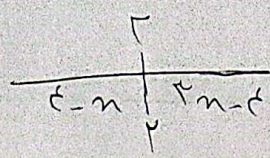
از (دفعه) بر سر B

تکلیف

محمد امین صفتی



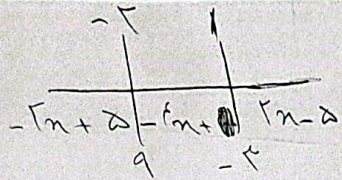
$\Rightarrow R = [-1, +\infty)$ ✓



$\Rightarrow R = [1, +\infty)$ ✓

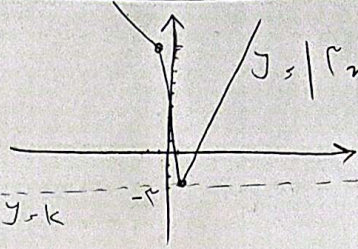
(2)

$y = |2n-2| - |n+2|$

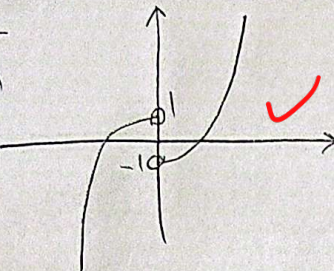
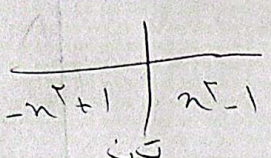


$y = k$

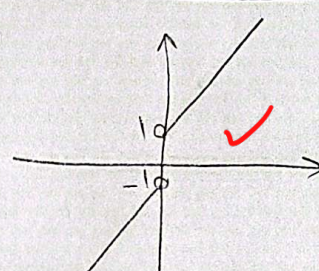
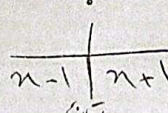
$\Rightarrow k = -2$ ✓



(2)

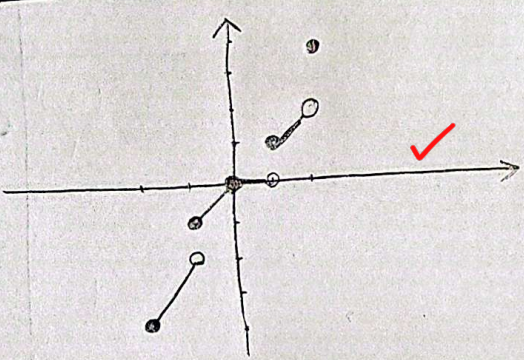


✓

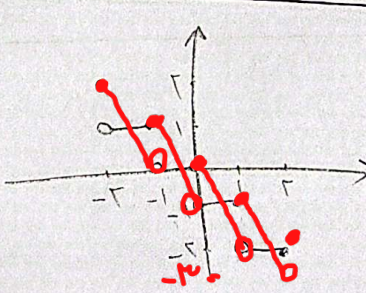


✓

(2)



✓



خط بجه بندی ها رو قی بنویس

(5)

$\{n-2[n] = 2(n-[n])$

$\Rightarrow 0 \leq n-2[n] < 2$

$\Rightarrow R = [0, 2)$ ✓

$0 \leq 2n - [2n] < 2$

$\Rightarrow R = [0, 2)$ ✓

(2)

$0 \leq 2n - [2n] < 2$

$\Rightarrow -1 < [2n] - 2n \leq 0$

$\Rightarrow R = (-1, 0]$ ✓

$n - 2[\frac{n}{2}] = 2(n - [\frac{n}{2}])$

$0 \leq n - 2[\frac{n}{2}] < 2 \Rightarrow 0 \leq n - [\frac{n}{2}] < 2$

$\Rightarrow R = [0, 2)$ ✓

(2)

$$R = [-5, 5] \checkmark$$

$$-\sqrt{13} \leq 4\sin n + 7\cos n \leq \sqrt{13} \quad (الف) \quad 9$$

$$\Rightarrow R = [-\sqrt{13}, \sqrt{13}] \checkmark$$

(2)

$$-\sqrt{5} \leq \cos n - 7\sin n \leq \sqrt{5}$$

$$\Rightarrow 0 \leq \sqrt{\cos n - 7\sin n} \leq \sqrt{5}$$

$$\Rightarrow R = [0, \sqrt{5}] \checkmark$$

$$(د) \quad \sqrt{29} \leq 7\sin n + 5\cos n \leq \sqrt{29} \quad (ب)$$

$$\Rightarrow -7 \leq 7\sin n + 5\cos n \leq 5$$

$$\Rightarrow R = [-7, 5] \checkmark$$

$$\sin \alpha \begin{cases} 1 \Rightarrow y = 7 \\ -1 \Rightarrow y = -5 \\ -\frac{5}{7} \Rightarrow y = 0 \end{cases} \Rightarrow R = [0, 7]$$

(الف) $\checkmark$ باید با $\sin n$ کار کنیم

(1.75)

$$\sin^2 \alpha \begin{cases} 1 \Rightarrow y = 4 \\ -1 \Rightarrow y = 0 \\ -\frac{5}{7} \Rightarrow y = \frac{5}{7} \end{cases} \rightarrow R = [\frac{5}{7}, 4]$$

$$y = \sin^2 + 4\cos^2 = 3\cos^2 + 1 \quad \cos^2 = 1 \Rightarrow y = 4$$

$$\Rightarrow R = [1, 4] \checkmark$$

(2)

$$y = \frac{7\cos n}{1 + \cos^2 n} = \frac{\frac{7\cos n}{\sin n}}{\frac{1}{\sin n}} = 7\cos n \cdot \sin n = \sin 2n$$

$$\Rightarrow R = [-7, 7] \checkmark$$

$$y = \sin^4 n + \cos^4 n \quad 1 - \frac{1}{2} \leq \sin^4 n + \cos^4 n \leq 1 \Rightarrow \frac{1}{2} \leq \sin^4 n + \cos^4 n \leq 1 \quad (الف) \quad 9$$

$$\Rightarrow R = [\frac{1}{2}, 1] \checkmark$$

(1.75)

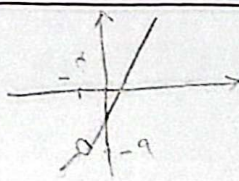
$$1 - \frac{1}{2} \leq \sin^4 n + \cos^4 n \leq 1 \Rightarrow \frac{1}{2} \leq \sin^4 n + \cos^4 n \leq 1$$

$$\Rightarrow 0 \leq [\sin^4 n + \cos^4 n] \leq 1 \Rightarrow R = \{0, 1\}$$

از یکجاست فقط عدد صحیح
میاد بیرون

$$\frac{7n^2 + 4n - 6}{n + 6} = \frac{(7n-1)(n+6)}{n+6} \quad n \neq -6$$

$$7(-6) - 1 = -43$$

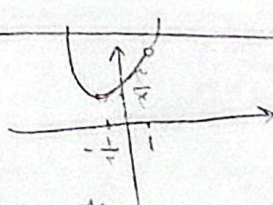


$$\Rightarrow R = \mathbb{R} - \{-43\} \checkmark$$

(2)

$$\frac{(n-1)(n^2+n+1)}{(n-1)} \quad n \neq 1$$

$$n = \frac{b}{a} = -\frac{1}{7} \Rightarrow y_{\min} = (-\frac{1}{7})^2 + (-\frac{1}{7}) + 1 = \frac{49}{49}$$



$$\Rightarrow R = [\frac{3}{4}, +\infty) \checkmark$$