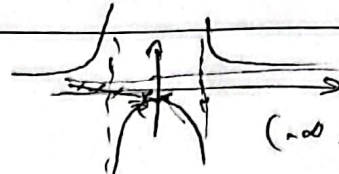


نام و نام خانوادگی پاسخنامه تشریحی تکلیف شماره کلاس

الف) $y = \frac{|x|+1}{|x|+2}$

$|x| \geq 0$

$|x|=0 \rightarrow \frac{1}{2}$
 $\lim_{x \rightarrow +\infty} y = 1$



$(-\infty, \frac{1}{2}] \cup [1, +\infty)$

ب) $y = \frac{x^2+1}{|x|} = |x| + \frac{1}{|x|}$

$|x| + \frac{1}{|x|} \geq 2$ $R: [2, +\infty)$

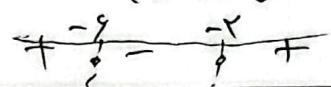
۲

$y = \frac{x^2+2x-2}{x+3}$

$x^2+2x-2 = y(x+3)$
 $x^2 + (2-y)x - (2+3y) = 0$
 $x = \frac{y-2 \pm \sqrt{(y-2)^2 + 4(2+3y)}}{2}$

$x^2 + (2-y)x - (2+3y) = 0$

$y^2 + 4y + 12 \geq 0$
 $(y+2)(y+6) \geq 0$



$R: (-\infty, -6] \cup [-2, +\infty)$

۲

۲

$f(x) = \frac{x^2-x+\frac{1}{x}}{x^2-x+1}$

$D_f: \mathbb{R}$

$D_f = \mathbb{R}$ چنانچه

$R_f: [0, 1)$

۱، ۱۷۵

$f(x)x^2 - f(x)x + f(x) = x^2 - x + \frac{1}{x}$

$x = \frac{f(x)-1 \pm \sqrt{(f(x)-1)^2 - 4(f(x)-1)(f(x)-\frac{1}{f(x)})}}{2}$

$(f(x)-1)x^2 - (f(x)-1)x + f(x) - \frac{1}{f(x)} = 0$

$-3f(x)^2 + 3f(x) \geq 0$ $-3f(x)(f(x)-1) \geq 0$

$\frac{1}{f(x)} + \frac{1}{f(x)} = \frac{2}{f(x)}$

الف) $y = \sqrt{-x^2+5x-1}$ $\frac{-b}{2a} = \frac{5}{-2} = -2.5$

$-5+1-1=3 \Rightarrow R: [0, \sqrt{3}]$

ب) $y = \sqrt{x^2-1}$ $\frac{-b}{2a} = \frac{1}{2} = 0.5$

$1-1=0 \Rightarrow R: [-2, +\infty)$

۲

۴

الف) $y = \log(x^2-x+1)$

$R: \mathbb{R}$

$R: \mathbb{R}$

log

ب) $y = \log_p(\frac{x^2+1}{x})$

$x + \frac{1}{x}$

$R: (-\infty, -2] \cup [2, +\infty)$

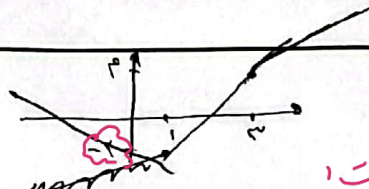
$R: [1, +\infty)$

۲

۵

الف) $y = |2n-2| - |n-3|$

ب) $y = |n-3| + |n+1|$ $R: [2, +\infty)$
 از طرف شیب
 که سطر است



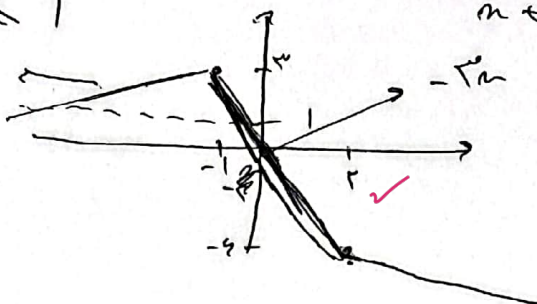
$R: \mathbb{R}$

وقت! $[-2, +\infty)$

۶

$|n-2| - |2n+2| \leq 1$

$-n+2+2n+2$
 $n+4$



$n+4 \leq 1 \Rightarrow n \leq -3$

$-2n = 1 \Rightarrow n = -\frac{1}{2}$

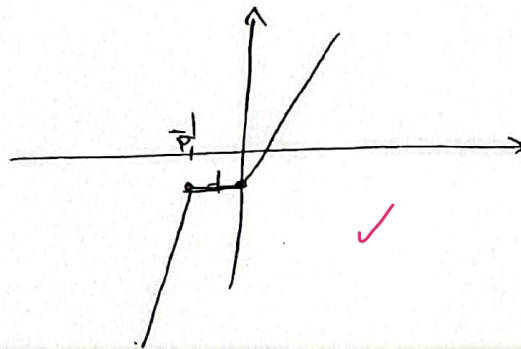
$n \in (-\infty, -3] \cup$

$[-\frac{1}{2}, +\infty)$

(۲)

۷

$y = 3n - |2n+1| + |n|$



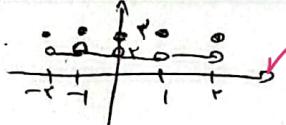
$R: \mathbb{R}$

(۲)

۸

الف) $[n] + [3-n]$

$\rightarrow [n] + [-n] + 3$
 ≤ -1



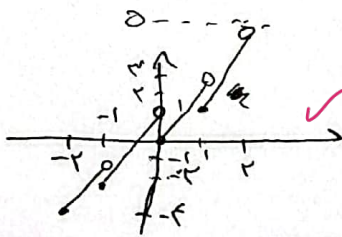
$R_y = \{2, 3\}$

(۱)

۹

ب) $y = 3n - [n]$

$-2 \leq n < -1 \Rightarrow 3n+2$
 $-1 \leq n < 0 \Rightarrow 3n+1$
 $0 \leq n < 1 \Rightarrow 3n$
 $1 \leq n < 2 \Rightarrow 3n-1$



$R_y = [-2, 5)$

بدست می آید

الف) $y = \sin^2 n - \sin n + 1$

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

$\frac{1}{4} - \frac{1}{4} + 1 = \frac{3}{4}$

$\sin^2 n \neq \frac{1}{4}$

وقت!

$1 - 1 + 1 = 1$

(۲)

۱۰

ب) $y = \sin^2 n + \sin n + 1$

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

$\frac{1}{4} + \frac{1}{4} + 1 = \frac{5}{2}$

$R: [\frac{1}{4}, 3]$

$1 + 1 + 1 = 3$

$$\sin^r u = 0 \rightarrow y = 1$$

$$\sin^r u = 1 \rightarrow y = r$$

$$\sin^r u = -\frac{b}{r_a} = -\frac{1}{r} x$$

$$\left\{ \begin{array}{l} R_y = [1, r] \end{array} \right.$$

1.1.