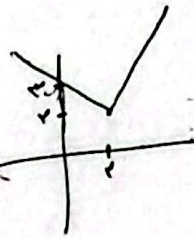


نام و نام خانوادگی: ..... مصدیری برای: ..... پاسخنامه تشریحی تکلیف شماره: ✓ کلاس: ..... بازرس: A .....  
 ۱۸۷۵

الف)  $y = (x-2) + x$

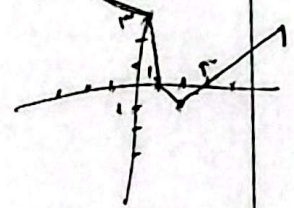
$$\frac{x^2}{x-2} \quad x-2 \quad x-2$$



$R_f = [2, +\infty)$  ✓

ب)  $y = |x-2| + |x-1| - |x|$

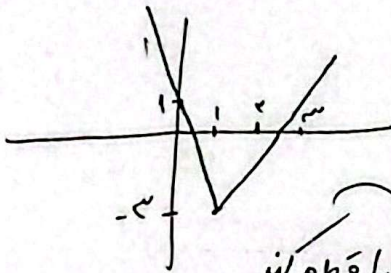
$$\frac{x}{x-2} \quad x-2 \quad x-2$$



$R_f = [-1, +\infty)$  ✓

(۲)

$|cx-c| - |x+1| = k$



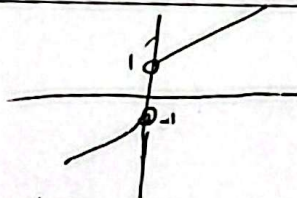
$k = -3$  ✓

باید ۳ واحد بالا بیاید  
 در نقطه محور x را قطع کند

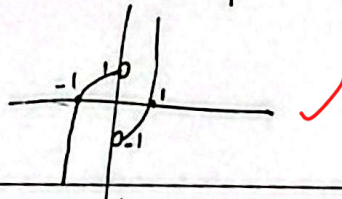
(۲)

۲

الف)  $y = x + \frac{x}{|x|}$



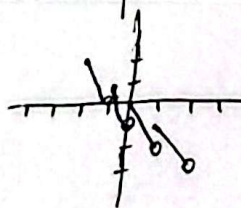
ب)  $y = x|x| - \frac{x}{|x|}$



(۲)

۳

الف)  $y = [x] - x$

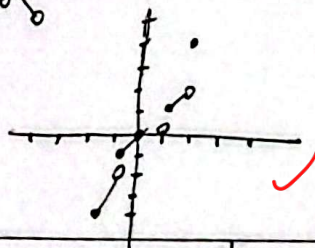


باید حتماً به بندی‌ها رو بنویسید ✓

(۱)

۴

ب)  $y = [x] |x|$



الف)  $y = x - [x] \rightarrow R_f = [0, 1)$  ✓

ب)  $y = x - 2[x] \rightarrow R_f = [0, 2)$  ✓

ج)  $y = x - \omega\left[\frac{x}{\omega}\right] \rightarrow \omega\left(\frac{x}{\omega} - \left[\frac{x}{\omega}\right]\right) \rightarrow R_f = [0, \omega)$  ✓

د)  $y = [x] - x \rightarrow R_f = (-1, 0]$  ✓

$x([x] - x)$

(۲)

$$الف) y = \varepsilon \sin x + \varepsilon \cos x \rightarrow R_{\pm} [-\sqrt{\varepsilon^2 + \varepsilon^2}, \sqrt{\varepsilon^2 + \varepsilon^2}] \rightarrow R_{\pm} [-\sqrt{2}\varepsilon, \sqrt{2}\varepsilon] \checkmark$$

$$ب) y = \varepsilon \sin x - \varepsilon \cos x \rightarrow R_{\pm} [-\sqrt{\varepsilon^2 + \varepsilon^2}, \sqrt{\varepsilon^2 + \varepsilon^2}] = [-\sqrt{2}\varepsilon, \sqrt{2}\varepsilon] \checkmark (2)$$

$$ج) y = [\varepsilon \sin x + \varepsilon \cos x] \rightarrow -\sqrt{2}\varepsilon \leq A \leq \sqrt{2}\varepsilon \rightarrow R_{\pm} [\pm\varepsilon, \pm\varepsilon] \checkmark$$

$$د) y = \sqrt{\cos x - \varepsilon \sin x} \rightarrow -\sqrt{0} \leq \cos x - \varepsilon \sin x \leq \sqrt{0} \rightarrow R_{\pm} [0, \sqrt{0}] \checkmark$$

$$الف) y = \sin^2 x + \varepsilon \sin x + \varepsilon$$

$$\begin{cases} \sin x = 1 \rightarrow y = 2 \\ \sin x = -1, 0 \rightarrow y = 0 \\ \sin x = -1 \rightarrow y = 0 \end{cases} \Rightarrow R_{\pm} [0, 2] \checkmark$$

$$ب) y = \varepsilon \sin^2 x + \varepsilon \sin x + \varepsilon$$

$$\begin{cases} \sin x = 1 \rightarrow y = \varepsilon \\ \sin x = -\frac{\varepsilon}{\varepsilon} \rightarrow y = \frac{\varepsilon}{\varepsilon} \\ \sin x = -1 \rightarrow y = 1 \end{cases}$$

$$R_{\pm} [\frac{\varepsilon}{\varepsilon}, \varepsilon] \checkmark$$

$$الف) y = \sin^2 x + \varepsilon \cos^2 x$$

$$1 - \cos^2 x \rightarrow 0 \leq \cos^2 x \leq 1 \Rightarrow \varepsilon \cos^2 x + 1$$

$$\Rightarrow R_{\pm} [1, \varepsilon] \checkmark$$

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

$$= \frac{\varepsilon \cos}{\frac{\sin^2 + \cos^2}{\sin^2}} = \varepsilon \sin \cos x \Rightarrow \sin^2 x$$

$$R_{\pm} [-1, 1] \checkmark$$

$$الف) y = \sin^4 x + \cos^4 x$$

$$-1 \leq A \leq 1$$

$$R_{\pm} [\frac{1}{2}, 1] \checkmark$$

$$ب) y = [\sin^4 x + \cos^4 x]$$

$$\sqrt{1} \leq \sin^4 x + \cos^4 x \leq 1$$

$$R_{\pm} \{0, 1\} \checkmark$$

$$الف) y = \frac{\varepsilon x^2 + \varepsilon x - \varepsilon}{x + \varepsilon} = \frac{(\varepsilon x - 1)(x + \varepsilon)}{x + \varepsilon} = \varepsilon x - 1 \rightarrow R_{\pm} \mathbb{R} - \{-1\} \checkmark$$

$$ب) y = \frac{x^2 - 1}{x - 1} \rightarrow \frac{(x - 1)(x + 1)}{x - 1} = x + 1 \rightarrow R_{\pm} [\frac{\varepsilon}{2} + \infty) \checkmark$$

$$x \text{ از } 1 \text{ بزرگتر}$$

$$f(1) = f(-1) = 3$$

چون تابع زوج است  
مقدار دو برابر می باشد