

اس کا اس پانچویں = A

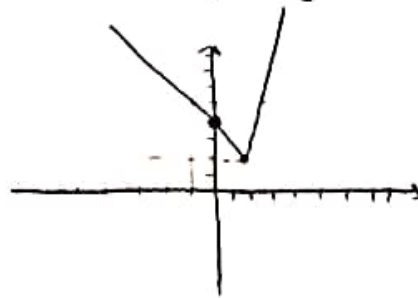
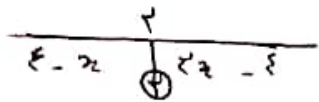
۱۸، ۷۵

دیا سہر تھائی

نام و نام خانگہ: علی ربانی

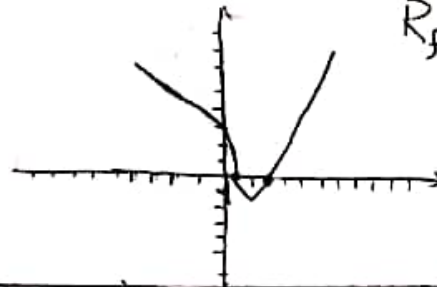
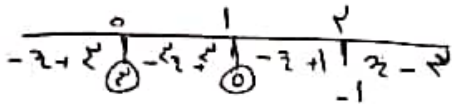
پاسخ دہ تکلیف شمار: V

$$الف) y = x + |x - 4|$$



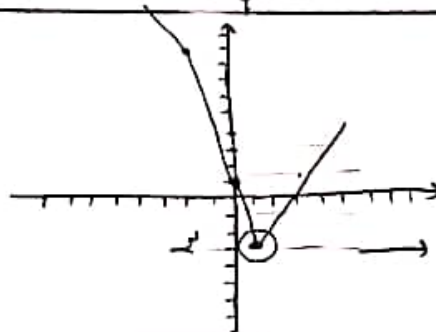
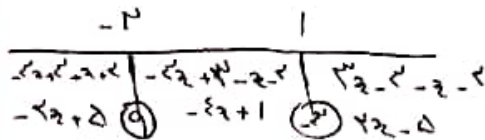
$$R_f = [2, +\infty) \quad \checkmark \quad (2) - 1$$

$$ب) y = |x - 2| + |x - 1| - |x|$$



$$R_f = [-1, +\infty) \quad \checkmark$$

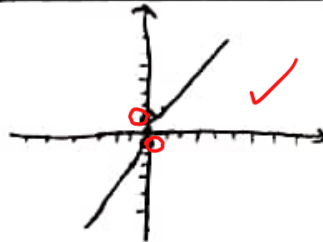
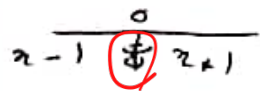
$$|x^2 - 5| - |x^2| = k$$



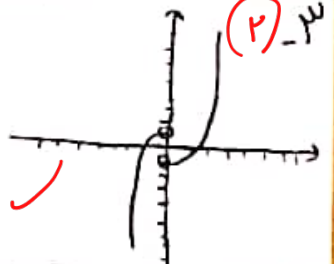
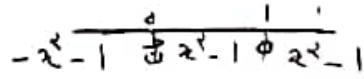
$$(2) - 1'$$

$$\Rightarrow k = [-5] \quad \checkmark$$

$$الف) y = x + \frac{x}{|x|}$$

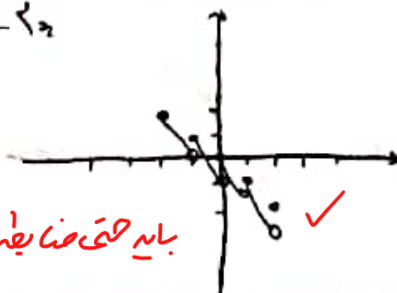


$$ب) y = x|x| - \frac{x}{x}$$

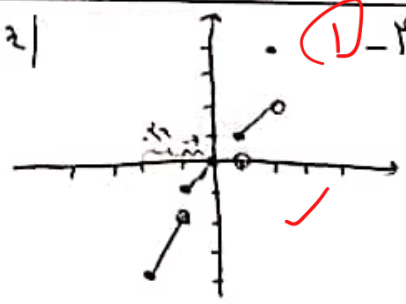
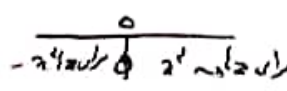


$$(2) - 3$$

$$الف) y = [x] - x$$



$$ب) y = [x]|x|$$



$$(1) - 4$$

باید صحت مندرجہ بندی کا رو بنویسے

$$الف) y = x - [x] \Rightarrow R_f = [0, 1) \quad \checkmark$$

$$ب) y = [x] - x = (-1, 0] \quad \checkmark - 5$$

$$ب) y = x - \{x\} = x - (x - [x]) \rightarrow R_f = [0, 1) \quad \checkmark$$

$$ج) y = x - \{ \frac{x}{5} \} \Rightarrow \{ \frac{x}{5} - [\frac{x}{5}] \} \rightarrow R_f = [0, 1) \quad \checkmark$$

الف) $y = 4 \sin^2 z + 4 \cos^2 z \xrightarrow{\frac{4 \sin^2 z + 4 \cos^2 z}{\sqrt{4 \sin^2 z + 4 \cos^2 z}}} R_f = [-\sqrt{16}, \sqrt{16}] \checkmark \textcircled{2} - 6$

ب) $y = 4 \sin^2 z - 4 \cos^2 z \rightarrow R_f = [-\sqrt{16+9}, \sqrt{16+9}] = [-5, 5] \checkmark$

ج) $y = [4 \sin^2 z + 4 \cos^2 z] \rightarrow R_f = [-\sqrt{49}, \sqrt{49}] = [-7, 7] \checkmark$

د) $y = \sqrt{\cos^2 z - \sin^2 z} \rightarrow R_f = \sqrt{[-\sqrt{5}, \sqrt{5}]} = [0, \sqrt{5}] \checkmark$

الف) $y = \sin^2 z + 4 \sin^2 z + 4 \cos^2 z \rightarrow R_f = [0, 4] \checkmark$ ب) $y = 4 \sin^2 z + 4 \sin^2 z + 4 \cos^2 z \rightarrow R_f = [\frac{4}{\sqrt{2}}, \frac{4}{\sqrt{2}}] \checkmark \textcircled{2} - 4$

1 + 4 + 4 = 9
 $\frac{4}{\sqrt{2}} \rightarrow -\frac{4}{\sqrt{2}} \sin z$
 $1 - 4 + 4 = 1$

4 + 4 + 4 = 12
 $\frac{4}{\sqrt{2}} - \frac{4}{\sqrt{2}} \sin z + 4 \cos^2 z = \frac{4}{\sqrt{2}} - \frac{16}{\sqrt{2}} \sin^2 z + 4 \cos^2 z = \frac{4}{\sqrt{2}}$

الف) $y = \frac{\sin^2 z + \cos^2 z + 4 \cos^2 z}{1} \rightarrow R_f = [1, 5] \checkmark \textcircled{2} - 1$
 $\begin{bmatrix} 1 & 0 \\ 0 & 1 \end{bmatrix} \rightarrow \begin{bmatrix} 0 & 4 \end{bmatrix} + 1$

ب) $y = \frac{4 \cot^2 z}{1 + \cot^2 z} \quad 1 + \cot^2 z = \frac{1}{\sin^2 z} = \frac{4 \frac{\cos^2 z}{\sin^2 z}}{\frac{1}{\sin^2 z}} = \frac{4 \cos^2 z \sin^2 z}{1} = \frac{4 \cos^2 z \sin^2 z}{1}$
 $R_f = [-1, 1] \checkmark$

الف) $y = \sin^2 z - \cos^2 z$
 $\sin^2 z + \cos^2 z = (\sin^2 z + \cos^2 z)(\sin^2 z - \sin^2 \cos^2 z + \cos^2 z)$
 $\sin^2 z + \cos^2 z = 1 \Rightarrow (-\sin^2 \cos^2 z + 1)(1)$
 $-2 \left(\frac{1 - \cos^2 z}{2} + \frac{1 + \cos^2 z}{2} \right)$

$\begin{bmatrix} 0 & 1 \\ 0 & 1 \end{bmatrix}$
 $-2 \left(\frac{1 - \cos^2 z}{2} \right) + 1$

$\begin{bmatrix} 0 & \frac{1}{2} \end{bmatrix} \begin{bmatrix} -\frac{2}{2} & 0 \end{bmatrix} + 1 = \begin{bmatrix} 1 & 0 \end{bmatrix} \checkmark$

ب) $y = [\sin^2 z + \cos^2 z] \checkmark \textcircled{4} - 9$
 $\frac{1}{\sqrt{2}} \leq \frac{1}{\sqrt{2}} \leq 1$

$R_f = \begin{bmatrix} 0 & 1 \end{bmatrix} \checkmark$

الف) $y = \frac{z^2 + 4z - 4}{z + 4} = \frac{(z+4)(z-1)}{z+4} = z-1 \Rightarrow R_f = \mathbb{R} - \{9\} \checkmark \textcircled{1, \sqrt{5}} + 10$

ب) $y = \frac{z^2 - 1}{z - 1} = \frac{(z-1)(z+1)}{z-1} = z+1 \quad \left| \frac{-1}{z} \right| \Rightarrow R_f = [\frac{1}{4}, +\infty) \checkmark$

$D = \mathbb{R} - \{1\}$

دایره بر حسب پایه
 و سه همن 3 حرف نمیشه
 لحاظ نمیشه از آنجایی که نمیشه با هم