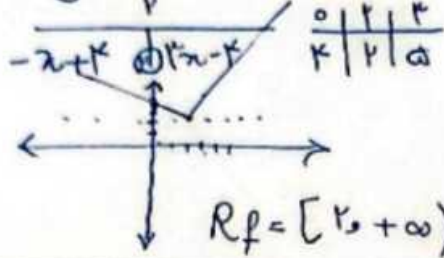
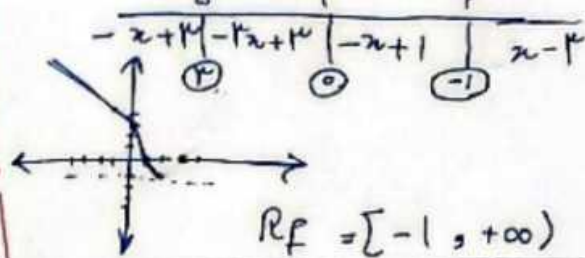


نام و نام خانوادگی: حسین جالی شماره: ۷ کلاس: یازدهم دبیرستان

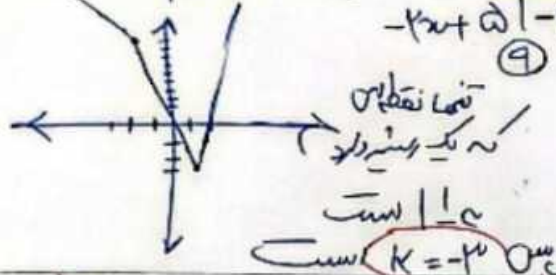
الف) $y = x + |2x - 1|$



ب) $y = |x - 2| + |x - 1| - |x|$

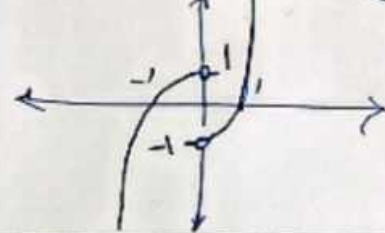


$|3x - 3| - |x + 2| = 1$

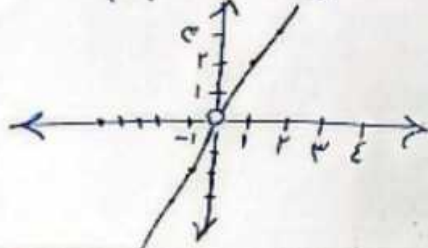


$-2x + 5 \leq -x + 1 \leq 2x - 5$

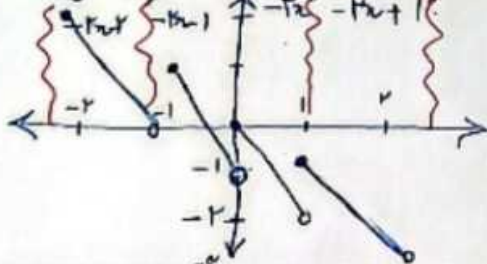
ب) $y = x/|x| - |x|$



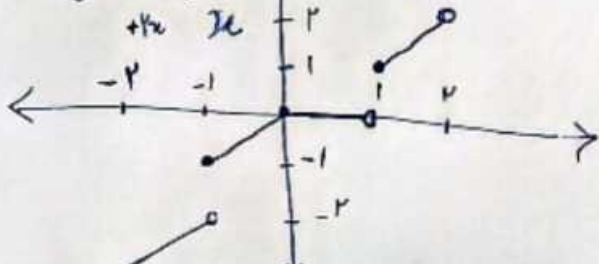
الف) $x + \frac{x}{|x|}$



الف) $y = [x] - 2x$



ب) $y = [x] |x|$



الف) $y = 3x - [3x]$ $R_f = [0, 1)$

ب) $y = 2x - [2x] = 2(x - [x])$ $R_f = [0, 2)$

ج) $y = x - 5[\frac{x}{5}] = 5(\frac{x}{5} - [\frac{x}{5}])$ $R_f = [0, 5)$

د) $y = [2x] - 2x$ $R_f = (-1, 0]$

هـ) $y = [x] - [x^2]$ $R_f = [0, 1)$

الف) $y = p \sin x + q \cos x = -\sqrt{p^2+q^2} \leq p \sin x + q \cos x \leq \sqrt{p^2+q^2}$ $R_f = [-\sqrt{p^2+q^2}, \sqrt{p^2+q^2}]$

ب) $y = p \sin x - q \cos x = -\sqrt{p^2+q^2} \leq p \sin x - q \cos x \leq \sqrt{p^2+q^2}$ $R_f = [-\sqrt{p^2+q^2}, \sqrt{p^2+q^2}]$

ج) $y = [p \sin x + q \cos x]$ $-\sqrt{p^2+q^2} \leq p \sin x + q \cos x \leq \sqrt{p^2+q^2}$ $R_f = [-\sqrt{p^2+q^2}, \sqrt{p^2+q^2}]$

د) $y = \sqrt{\cos x - p \sin x}$ $R_f = \sqrt{[-\sqrt{p^2+1}, \sqrt{p^2+1}]} = [0, \sqrt{p^2+1}]$

الف) $y = \sin^2 x + p \sin x + q$ $-1 \leq 1 - p + q = 0$ $1 = 1 + p + q = 4$ $\frac{-b}{2a} = \frac{-p}{2}$ $R_f = [0, 4]$

ب) $y = p \sin^2 x + q \sin x + r$ $-1 = p - q + r = 1$ $1 = p + q + r = v$ $\frac{-b}{2a} = \frac{-q}{2} = \frac{11}{14} - \frac{9}{14} + p = \frac{11 - 9 + 14p}{14} = \frac{2 + 14p}{14}$ $R_f = [\frac{2}{14}, v]$

الف) $y = \sin^2 x + \cos^2 x = \sin^2 x + \cos^2 x + p \cos x + 1 = p \cos x + 1 \Rightarrow R_f = [1, p+1]$

ب) $y = \frac{p \cot x}{1 + \cot^2 x} = \frac{\frac{p \cos x}{\sin x}}{\frac{1}{\sin^2 x}} = p \cos x \sin x = \sin 2x$ $R_f = [-1, 1]$

الف) $y = \sin^4 x + \cos^4 x$ $\frac{1}{2} = p^{1-p} \leq \sin^4 x + \cos^4 x \leq 1$ $R_f = [\frac{1}{2}, 1]$

ب) $y = [\sin^4 x + \cos^4 x]$ $\frac{1}{2} = p^{1-p} \leq \sin^4 x + \cos^4 x \leq 1$ $R_f = [\frac{1}{2}, 1] = [0, 1]$

الف) $y = \frac{p^2 + q^2 + r^2}{x + p} = \frac{p^2 + q^2 + r^2}{x + p} = \frac{p^2 + q^2 + r^2}{x + p}$ $y = rx - 1$ $R_f = \mathbb{R} - \{ -\frac{1}{r} \}$

ب) $y = \frac{u-1}{u-1} = \frac{(u-1)(u+1+w)}{u-1}$ $\frac{-b}{2a} = \frac{-1}{2}$ $\frac{1}{2} + 1 - \frac{1}{2} = \frac{1}{2}$ $R_f = [\frac{1}{2}, +\infty)$