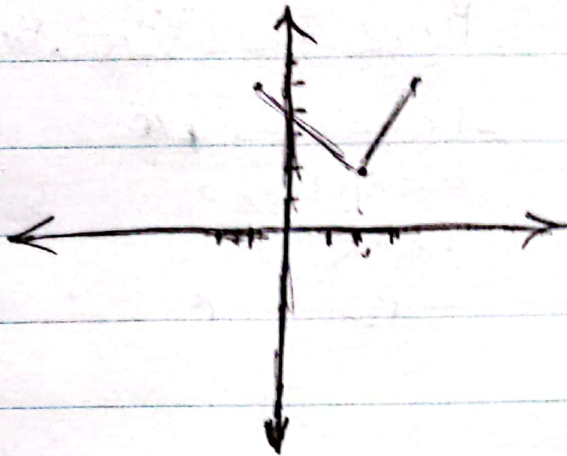


۴,۲۵

به دلیل نامرتب بودن و تشریح نام، نام خانوادگی نفره شما (ه) می باشد.

(الف) ①

۱) $R = [2, +\infty)$



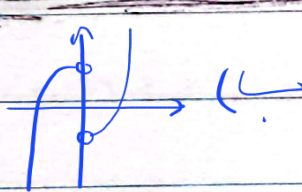
(ب)

$R = \mathbb{R}$

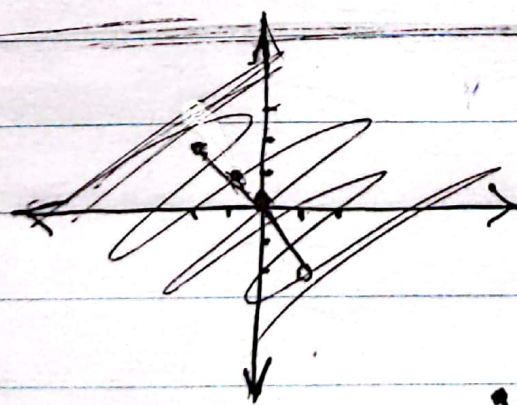
$-x+3 \mid -2x+5 \mid -x+1 \mid x-2$

$R = [-1, +\infty)$

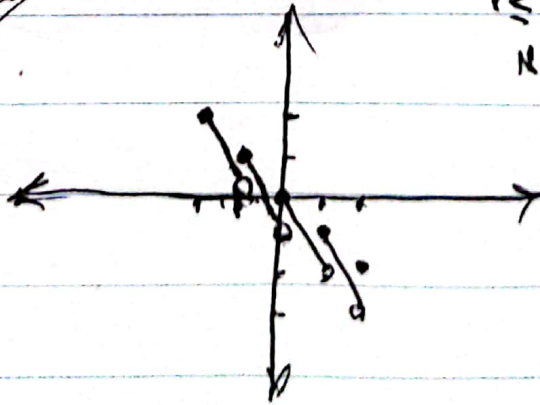
$-2x+5 \mid -2x+1 \mid x-0$
 $K = -3$



(الف)



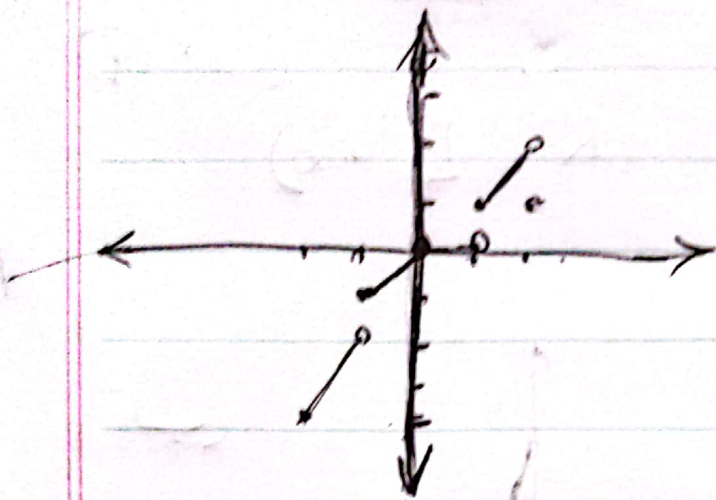
$2 \leq x \leq -1 \Rightarrow -2x-2$
 $-1 \leq x < 0 \Rightarrow -2x-1$
 $0 \leq x < 1 \Rightarrow -2x$
 $1 \leq x < 2 \Rightarrow -2x+1$
 $x=2 \Rightarrow 2$



Date _____

Subject _____

(10) 1/1



$$-2 \leq x < -1 \Rightarrow (x, 1) \text{ و } (x, -1) \quad \text{ب}$$

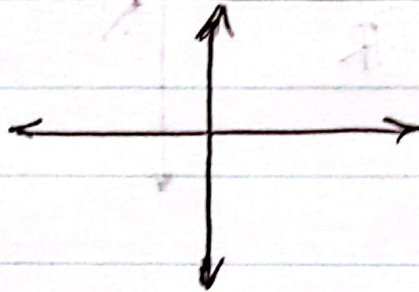
$$-1 \leq x < 0 \Rightarrow +1 \quad \text{ب}$$

$$0 \leq x < 1 \Rightarrow 0 \quad \text{ب}$$

$$1 \leq x < 2 \Rightarrow 1 \quad \text{ب}$$

$$x=2 \Rightarrow 2 \quad \text{ب}$$

الف



$$R = (0, 1) \quad \text{الف}$$

$$R = (0, 1) \quad \text{ب}$$

$$R = (0, 1) \quad \text{ج}$$

$$(-1, 0) \quad \text{د}$$

$$[-2, 2] \quad \text{ب}$$

$$[-\sqrt{14}, \sqrt{14}] \quad \text{الف}$$

$$-4, -3, -2, -1, 0, 1, 2, 3, 4, 5 \leftarrow [-\sqrt{29}, \sqrt{29}] \quad \text{ج}$$

$$[0, \sqrt{5}] \quad \text{د}$$

$$\sin \alpha = \frac{-b}{r_m} = \frac{-r}{r}$$

(الف)

$$R = \left[-\frac{r}{r}, 0\right]$$

$$\sin \alpha = 1 \Rightarrow y = d \text{ max}$$

$$\sin \alpha = -1 \Rightarrow y = 0$$

$$R = [1, 1]$$

150

$$\sin \alpha = \frac{-b}{r_m} = \frac{-r}{r} \text{ min}$$

(ب)

$$R = \left[-\frac{r}{r}, 1\right]$$

$$\sin \alpha = -1 \Rightarrow y = 1$$

$$\sin \alpha = 1 \Rightarrow y = v \text{ max}$$

$$R = \left[\frac{v}{r}, v\right]$$

$$y = 1 + r \cos \alpha \Rightarrow R = [1, r]$$

(ج)

1

$$y = \frac{r \cos \alpha}{\frac{1}{\sin \alpha}} = r \sin \alpha \cos \alpha \Rightarrow R = [0, r]$$

$$R = [0, 4r]$$

د

9

$$y \neq r \Rightarrow y = r + r \cos \alpha \Rightarrow y = r(1 + \cos \alpha)$$

$$-r^2 + r(y - r) + r \Rightarrow \Delta = 9r^2 = \frac{-y + r \pm \sqrt{(y - r)^2 - r^2}}{-r} = 5r$$

$$(y - r)^2 + r^2 \geq 0 \Rightarrow y^2 - 4y + 9 + r^2 \geq 0$$

$$R = [1, +\infty)$$

DMS

$$y \neq y = r \Rightarrow y(r - 1) \leq r - 1$$