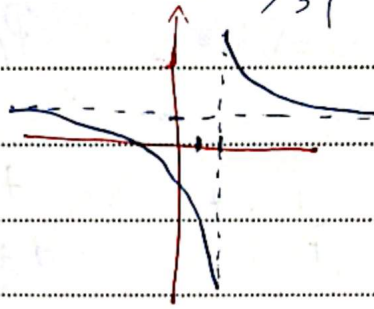
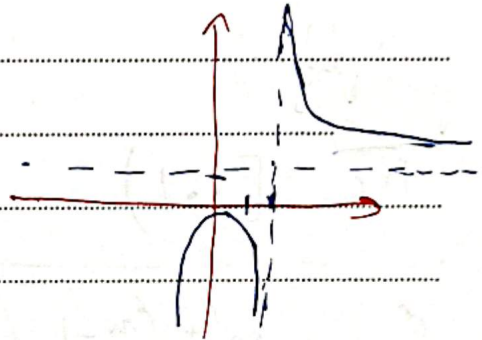


عرفان حقیق دوازدهم سر B

الف) $\frac{n+1}{n-2}$



$$\Rightarrow \frac{|n|+1}{|n|-2} \Rightarrow$$



$$R_f = \left(-\infty, -\frac{1}{2}\right] \cup \left(1, +\infty\right)$$

ب) $\frac{n^2+1}{|n|} \xrightarrow{|n|=+} \frac{+^2+1}{+} \Rightarrow + + \frac{1}{+}$

جمع دو عدد معکوس مثبت همواره از ۲ بزرگتر است

$$R_f = [2, +\infty)$$

۲) $y(n+2) = n^2 + 2n - 2 \Rightarrow y n + 2y = n^2 + 2n - 2$

$$n^2 + (2-y)n - 2y + 2 = 0 \Rightarrow \Delta \geq 0 \Rightarrow (2-y)^2 - 4(-2y+2)$$

$$\Rightarrow y^2 + 8y + 12 \geq 0 \Rightarrow (y+2)(y+4) \geq 0 \Rightarrow (-\infty, -4] \cup [-2, +\infty)$$

$$R_f = (-\infty, -4] \cup [-2, +\infty)$$

$$r) \quad n - n + 1 \neq 0 \text{ ممتنع } \Rightarrow \mathbb{P}_f = \mathbb{R}$$

$$\frac{\left(n - \frac{1}{r}\right)^r}{\left(n - \frac{1}{r}\right)^r + \frac{r}{r}} \Rightarrow n - \frac{1}{r} = t \Rightarrow \frac{t}{t + \frac{r}{r}} \quad t \begin{cases} \text{max} = +\infty \\ \text{min} = 0 \end{cases}$$

$$\mathbb{R}_f = [0, 1)$$

$$r) \quad -m^r + (n-1) \quad \left| \begin{array}{c} r \\ r \end{array} \right. \quad [-\infty, r]$$

$$\sqrt{-m^r + (n-1)} \Rightarrow [0, \sqrt{r}]$$

$$\Rightarrow y = \sqrt{r m^r - 1} \quad \left| \begin{array}{c} r \\ -1 \end{array} \right. \quad \mathbb{R}_y = [-1, +\infty)$$

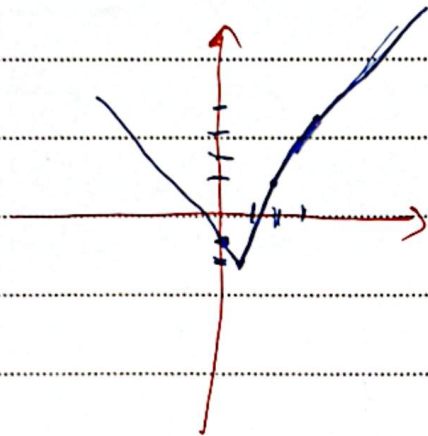
$$u) \quad \log \frac{n^r - n + 1}{n} \Rightarrow \mathbb{R}_y = \mathbb{R}$$

$$\Rightarrow \frac{n^r + 1}{n} \Rightarrow n + \frac{1}{n} \Rightarrow n + \frac{1}{n} \geq r$$

$$\log_r = 1 \Rightarrow \mathbb{R}_v = [1, +\infty)$$

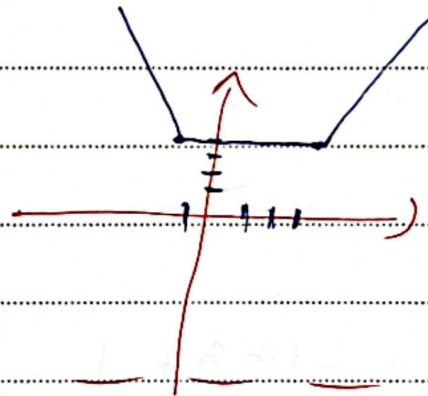
✓

$$\begin{array}{c|c|c} -1 & 1 & \mu \\ \hline -1 & 1 & \mu \\ \hline -1 & 1 & \mu \end{array}$$



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

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

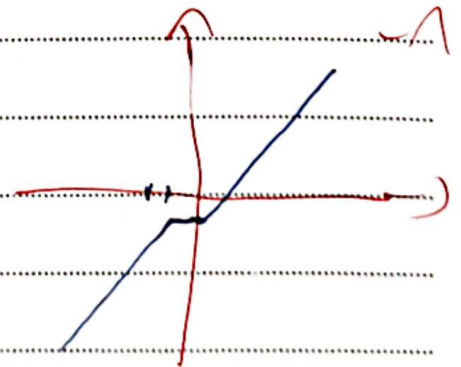


$$\begin{array}{c|c|c} -1 & 1 & \mu \\ \hline -1 & 1 & \mu \\ \hline -1 & 1 & \mu \end{array}$$

$$n \in [-1, 1] \cup \left[-\frac{1}{\mu}, \frac{1}{\mu}\right]$$

$$-\frac{1}{\mu}$$

$$\begin{array}{c|c|c} -1 & 1 & \mu \\ \hline -1 & 1 & \mu \\ \hline -1 & 1 & \mu \end{array}$$



$$R_y = \mathbb{R}$$

$$\text{الف) } y = [x] + [2-x] \quad (9)$$

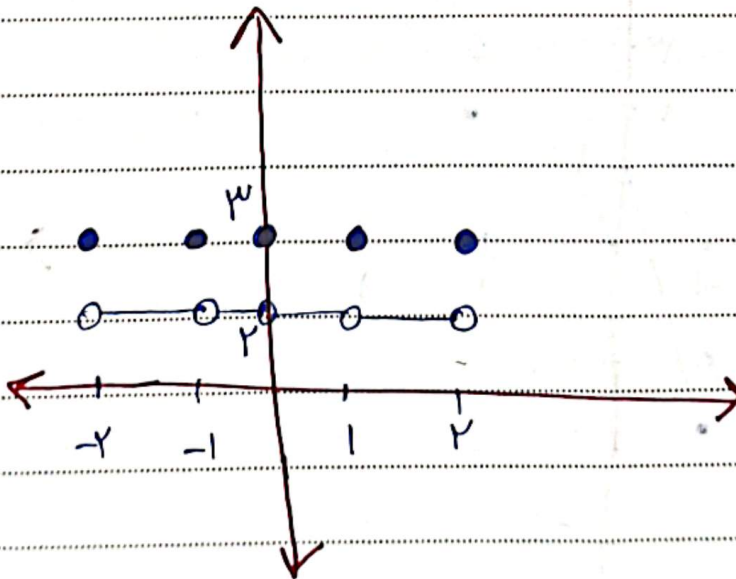
$$1) \quad -2 < x < -1 \Rightarrow y = -2 + 2 = 0$$

$$2) \quad -1 < x < 0 \Rightarrow y = -1 + 2 = 1$$

$$3) \quad 0 < x < 1 \Rightarrow y = 0 + 2 = 2$$

$$4) \quad 1 < x < 2 \Rightarrow y = 1 + 1 = 2$$

$$\begin{aligned} 5) \quad & x = -2 \Rightarrow y = -2 + 2 = 0 \\ & x = -1 \Rightarrow y = -1 + 2 = 1 \\ & x = 0 \Rightarrow y = 0 + 2 = 2 \\ & x = 1 \Rightarrow y = 1 + 2 = 3 \\ & x = 2 \Rightarrow y = 2 + 1 = 3 \end{aligned}$$



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$$\rightarrow y = 3x - [x]$$

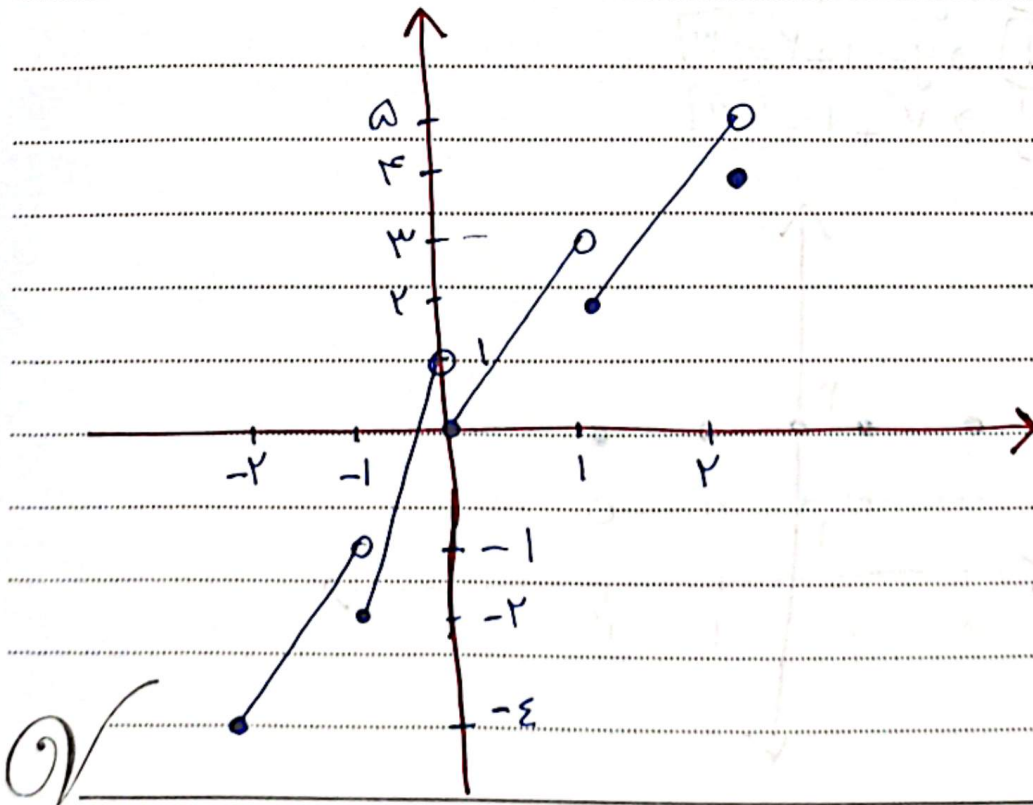
$$(1) -2 \leq x < -1 \Rightarrow y = 3x + 2 \quad \begin{cases} x = -2 \Rightarrow y = -4 \\ x = -1 \Rightarrow y = -1 \end{cases}$$

$$(2) -1 \leq x < 0 \Rightarrow y = 3x + 1 \quad \begin{cases} x = -1 \Rightarrow y = -2 \\ x = 0 \Rightarrow y = 1 \end{cases}$$

$$(3) 0 \leq x < 1 \Rightarrow y = 3x \quad \begin{cases} x = 0 \Rightarrow y = 0 \\ x = 1 \Rightarrow y = 3 \end{cases}$$

$$(4) 1 \leq x < 2 \Rightarrow y = 3x - 1 \quad \begin{cases} x = 1 \Rightarrow y = 2 \\ x = 2 \Rightarrow y = 5 \end{cases}$$

$$(5) x = 2 \Rightarrow y = 4 - 2 = 2$$



$$\begin{aligned} \rightarrow x=0 &\Rightarrow y=0+1=1 \\ \rightarrow x=1 &\Rightarrow y=1+1=2 \end{aligned}$$

$$y = \sin^{\mu} x - \sin^{\mu} x + 1 \quad \left\{ \begin{array}{l} 1 \\ \frac{1}{\mu} \\ -1 \end{array} \right\} \quad \frac{\mu}{\mu^{\mu}} \quad R_y = \left[\frac{\mu}{\mu}, 1 \right]$$

$$y = \sin^{\mu} x + \sin^{\mu} x + 1 \quad \Rightarrow \quad + \frac{\mu}{\mu} + \frac{\mu}{\mu} + 1 \quad \left\{ \begin{array}{l} 1 \\ -\frac{1}{\mu} \\ 1 \end{array} \right\} \quad \frac{\mu}{\mu}$$

$$R_y = [1, \frac{\mu}{\mu}]$$